EP SHB

South Humber Bank Energy Centre

South Marsh Road, Stallingborough, DN41 8BZ

Appendix 9A: Transport Assessment

Applicant: EP SHB Limited
Date: December 2018

DOCUMENT HISTORY

Revision	1		
Author	Jonathan Scott		
Signed		**Date**	December 2018
Approved By	Peter Firth		
Signed		**Date**	December 2018
Document Owner	AECOM		

GLOSSARY

Abbreviation	Description
ATC	Automatic Traffic Count
HE	Highways England
LOS	Level of Service
MCC	Manual Classified Count
MW	Megawatt
NELC	North East Lincolnshire Council
PCU	Passenger Car Unit
PIA	Personal Injury Accident
RDF	Refuse Derived Fuel
RFC	Ratio of Flow to Capacity
SHBPS	South Humber Bank Power Station

CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

Overview

1.1 This Transport Assessment has been prepared by AECOM on behalf of EP SHB (hereafter referred to as "the Applicant") to support a planning application under the Town and Country Planning Act 1990 for the construction, operation (including maintenance) and decommissioning of the Proposed South Humber Bank Energy Centre, an energy from waste facility on land to the east of the existing South Humber Bank Power Station, South Marsh Road, Stallingborough.

1.2 The Proposed Development is for the generation of electricity by combustion of refuse derived fuel (RDF). RDF comprises pre-treated, residual waste from municipal / household, commercial and industrial sources. The Proposed Development will generate electricity by way of a steam turbine which would be driven through the combustion of up to 753,500 tonnes per annum (tpa) of RDF (based on the lowest fuel net calorific value of 9 MJ/kg) generating 49.9 Megawatts (MW) of electricity.

1.3 A scoping exercise has been undertaken with North East Lincolnshire Council (NELC) and Highways England (HE) via email to agree the parameters of the Transport Assessment. A copy of the scoping correspondence received from NELC and HE officers is included in Annex 1.

1.4 The structure of the Transport Assessment is as follows:

- Section 2 provides a review of national and local planning policy;
- Section 3 provides a description of the Site location and existing highway conditions in the Site vicinity;
- Section 4 provides a review of access to the Site by sustainable transport modes;
- Section 5 provides an analysis of personal injury accident data within the vicinity of the Site over a five year period;
- Section 6 provides a review of the Proposed Development proposals;
- Section 7 provides a review of the estimated traffic generations to be generated by the Proposed Development and the local network assignment of this traffic;
- Section 8 outlines the growth factors to be applied to the baseline counts;
- Section 9 identifies the committed developments that have been taken account of as part of the assessment;
- Section 10 provides an assessment of the anticipated operational impact of the development on the immediate local highway network through a review of local link impact and junction capacity assessments;
- Section 11 assess the anticipated construction impact of the Proposed Development on the immediate local highway network through a review of local link impact and junction capacity assessments; and
- Section 12 provides assessment conclusions.

2.0 POLICY CONTEXT

2.1 The following sections outline the relevant planning policies in respect of the Proposed Development.

National Planning Policy Framework

2.2 The National Planning Policy Framework (NPPF) was updated in July 2018 (Department for Communities and Local Government (DCLG), 2018). The NPPF sets out the Government's planning policies for England.

2.3 The NPPF states that the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how to travel. The policy states that local authorities should support a pattern of development, which, where reasonable to do so, facilitates the use of sustainable modes of transport. Plans and decisions should ensure that developments that generate significant movements are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised.

2.4 The NPPF recommends that a Transport Statement (TS) or Transport Assessment (TA) should support all developments that generate significant amounts of movement and that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

North East Lincolnshire Local Plan 2013 – 2032 (adopted 2018)

2.5 The Local Plan was adopted by North East Lincolnshire Council in March 2018 and sets out the vision and objectives for the authority, allocates sites for housing, employment and other forms of development and sets out policies.

2.6 Key transport related policies relevant to the Proposed Development that form part of the Local Plan are as follows:

Policy 36: Promoting Sustainable Transport

2.7 The policy states that *"to reduce congestion, improve environmental quality and encourage more active and healthy lifestyles, the Council will support measures that promote more sustainable transport choices."* The policy states that where appropriate, policies should seek to:

- focus development which generates significant movements in locations where the need to travel will be minimised;
- prioritise pedestrian and cycle access to and within the site;
- make appropriate provision for access to public transport and other alternative means of transport to the car, adopting a 400 m walk to bus stop standard;
- make suitable provision to accommodate the efficient delivery of goods and supplies; and
- make suitable provision for electric vehicle charging, car clubs and car sharing when considering car park provision.

2.8 The policy goes on to state that *"planning permission will be granted where any development that is expected to have significant transport implications delivers necessary and cost effective mitigation measures to ensure that development has an acceptable impact on the network's functioning and safety."*

2.9 The policy also states that *"where appropriate, Transport Statements, Transport Assessments and/or Travel Plans should be submitted with applications with the*

precise form being dependent on the scale and nature of development and agreed through early discussion with the Council".

Policy 38: Parking

2.10 The policy states that *"Development proposals that generate additional parking demand should ensure that appropriate vehicle, powered two-wheeler and cycle parking provision is made. The form and scale of off-street parking required will be assessed against the following:*

- The accessibility of the development;
- The type, mix and use of the development;
- The availability and frequency of public transport services; and
- Local car ownership levels."

2.11 The policy states that developers should consider and incorporate measures to minimise parking provision without causing a detrimental impact to the functioning of the local highway network.

2.12 The policy goes on to state that at least 5% of parking bays should be allocated for people with mobility impairments.

North East Lincolnshire Local Transport Plan (2016 – 2032)

2.13 North East Lincolnshire's Local Transport Plan sets out a programme for a wide range of improvements to local transport over the period 2016 to 2032. The objectives of the plan include:

- enable sustainable growth through effective transport provision;
- improve journey times and reliability by reducing congestion;
- support regeneration and employment by connecting people to education, training and jobs;
- enable disadvantaged groups or people living in disadvantaged areas to connect with employment, healthcare, social and leisure opportunities;
- improve the health of individuals by encouraging and enabling more physically active travel;
- provide safe access and reduce the risk of loss, death or injury due to transport collisions or crime;
- improve the journey experience on the local transport network; and
- ensuring that transport contributes to environmental excellence, including managing air quality and reducing transport-related greenhouse gas emissions.

2.14 Major local highways and transport improvement schemes within the immediate area to the application Site include the South Humber Bank Link Road which received planning permission in September 2018.

3.0 EXISTING SITE CONDITIONS

Site Location

3.1 The Site for the Proposed Development is located off South Marsh Road, Stallinborough, North East Lincolnshire approximately 5 km south-east of Immingham. The Main Development Area is located on vacant land to the east of the existing South Humber Bank Power Station (SHBPS). The Site location is shown in Figure 3.1 below. The Site and Main Development Area boundaries are shown in Annex 5, where the Site is the defined by the Planning Application Boundary (red line) and the Main Development Area is the Proposed Development Area within the Site.

3.2 South Marsh Road provides highway access to the main SHBPS and also to Synthomer (UK) Limited and the NEWLINCS Integrated Waste Management Facility, both located north of the Site.

Figure 3.1: Site Location

Existing Highway Network

<u>South Marsh Road</u>

3.3 South Marsh Road is a 6.75 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. As described above, the road provides access to the SHBPS and a number of other industrial units. South Marsh Road meets Hobson Way at a large priority junction.

Hobson Way

3.4 Hobson Way is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. A pedestrian footway is provided along the western side of the carriageway between South Marsh Road and Kiln Lane. Hobson Way meets Kiln Lane at a four arm standard roundabout junction.

Kiln Lane

3.5 Kiln Lane is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. Kiln Lane provides access to a number of industrial units which are located along its frontage. Kiln Lane meets the A1173 at a standard four arm roundabout.

A1173

3.6 The A1173 is a 7.3 m wide single carriageway road and is subject to the 60 mph national speed limit for single carriageway roads providing access to Immingham and Immingham Docks. There are no footways along its length between the A1173 and the Kiln Lane roundabout. The A1173 continues towards the A180 forming a grade separated junction where it meets the A180. The junction is also known as the Stallingborough Interchange.

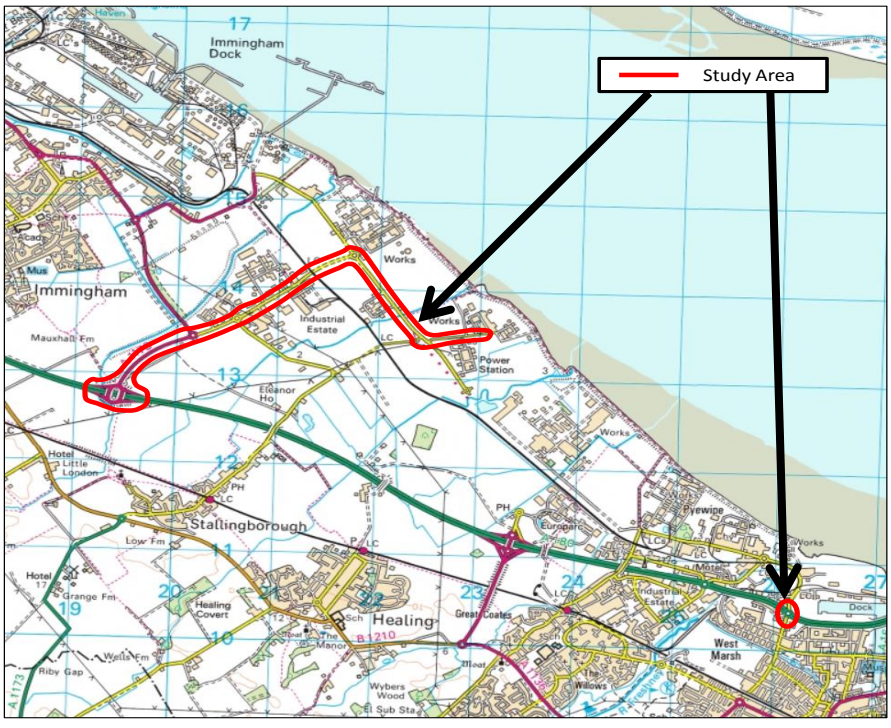
A180

3.7 The A180 is a dual carriageway providing access to Grimsby to the south east and the M180 to the west. The A180 is subject to the 70 mph national speed limit for dual carriageways and is part of Highways England's core network.

Baseline Traffic Flows

3.8 The Study Area for assessment which has been agreed with NELC and HE during TA scoping is shown in Figure 3.2 below.

Figure 3.2: Study Area



3.9 Baseline traffic flows for the immediate local highway network have been established through peak hour classified junction counts at the following locations as agreed with NELC and HE:

- MCC 1: South Marsh Road / Hobson Way;
- MCC 2: Hobson Way / Laporte Road / Kiln Lane;
- MCC 3: Kiln Lane / North Moss Lane / Trondheim Way;
- MCC 4: A1173 / Kiln Lane;
- MCC 5: A1173 / A180 Stallingborough Interchange; and
- MCC 6: A180 / Moody Lane / Pyewipe Road (Westgate Roundabout).

3.10 The counts were undertaken on Thursday 7th June 2018 apart from MCC 5, which was undertaken on Wednesday 5th July 2017 and MCC's 3 and 6 which were undertaken on Thursday 11th October 2018. The raw traffic data is provided in Annex 2.

3.11 In order to establish the peak hours for assessment, the total flows arriving at each individual junction have been calculated as total vehicles. The total vehicle flows arriving at each of the four junctions across the network have then been combined in order to identify the base peak hours for assessment

3.12 Table 3.1 below summarises the total flows into each junction and identifies time period 07:00 – 08:00 as the weekday AM peak hour and 16:00 – 17:00 as the PM Peak hour.

Table 3.1: Establishing the 2018 Baseline Weekday Peak Hours

Peak Hours	MCC 1	MCC 2	MCC 3	MCC 4	MCC 5	MCC 6	TOTAL
07:00 – 08:00	176	438	795	1,740	1,981	3,846	**8,976**
08:00 – 09:00	80	349	808	1,342	1,611	4,131	**8,321**
09:00 – 10:00	64	206	501	889	1,044	3,112	**5,816**
16:00 – 17:00	91	430	1,034	1,802	2,031	4,504	**9,892**
17:00 – 18:00	158	308	725	1,606	1,791	4,304	**8,892**
18:00 – 19:00	101	205	417	980	1,131	3,061	**5,895**

3.13 The 2018 baseline data for the identified AM and PM Peak hours at the key junctions is shown in Annex 3. The data is presented as follows:

- Total Vehicles;
- Heavy Goods Vehicles (HGV) (Over 3.5 tonnes including buses);
- Passenger Car Units (PCU).

3.14 In addition, a series of Automatic Traffic Counts (ATCs) have been undertaken in June and September 2018 at the following locations within the Study Area:

- South Marsh Road (East of Hobson Way);

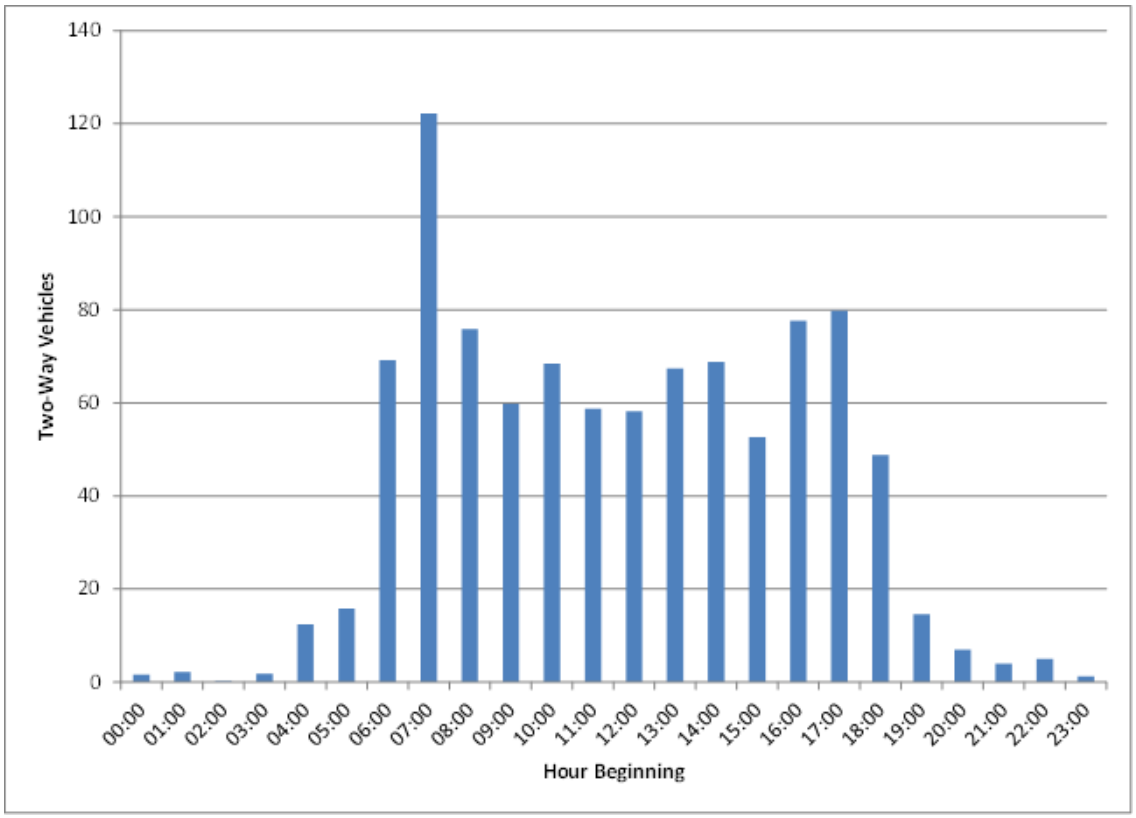
- South Marsh Road (West of Hobson Way);
- Hobson Way (North of South Marsh Road);
- Kiln Lane (West of Hobson Way);
- A1173 (West of North Moss Lane);
- A1173 (North of A180); and
- A180 Westgate (East of Westgate Roundabout).

3.15 From this data, the following typical traffic flows are evident on each link:

South Marsh Road (East of Hobson Way)

- Average Weekday Morning Peak (two-way):122 vehicles.
- Average Weekday Evening Peak (two-way): 80 vehicles.
- Annual Average Weekday Traffic (two-way): 973 vehicles.

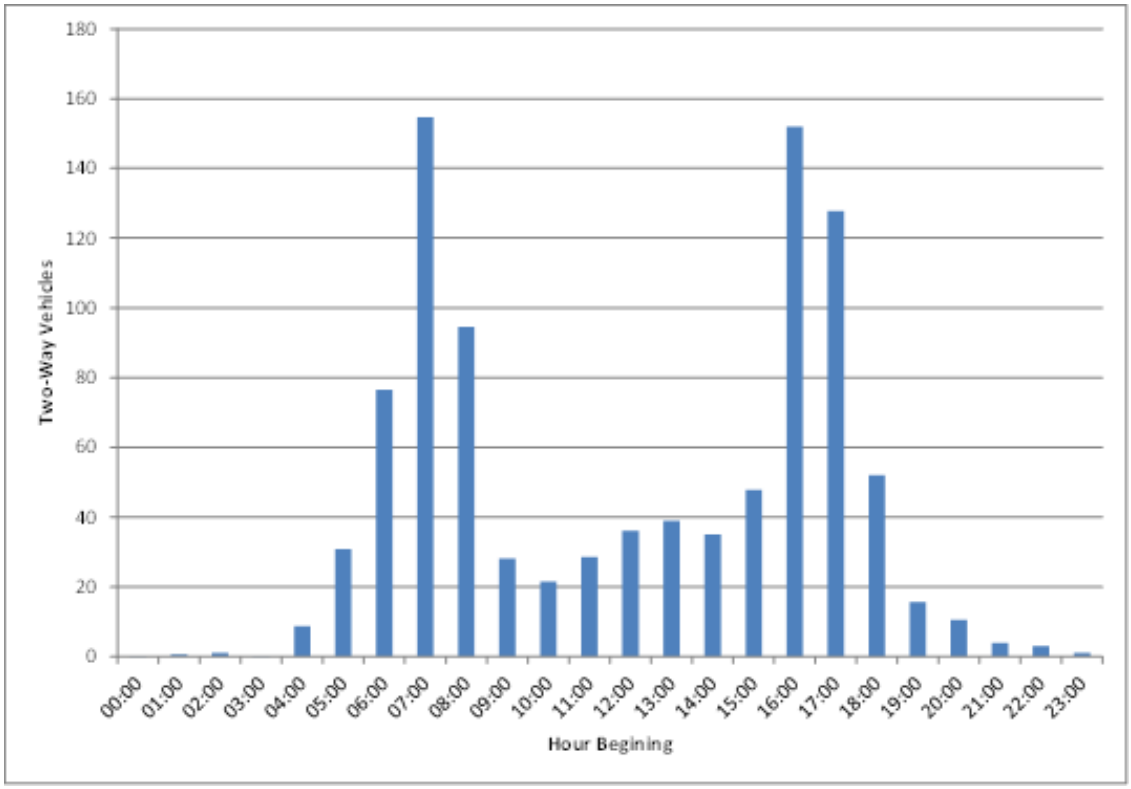
Figure 3.3: South Marsh Road (East of Hobson Way) Average Weekday Profile



South Marsh Road (West of Hobson Way)

- Average Weekday Morning Peak (two-way):155 vehicles.
- Average Weekday Evening Peak (two-way): 152 vehicles.
- Annual Average Weekday Traffic (two-way): 970 vehicles

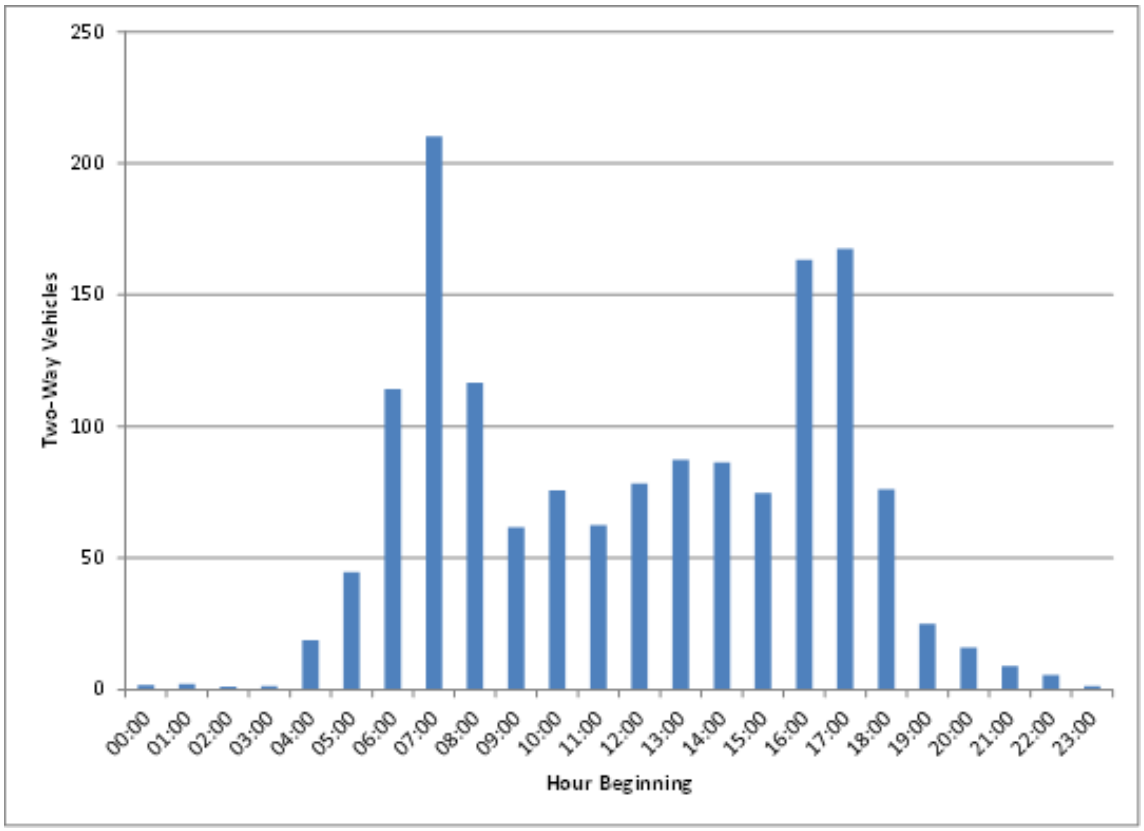
Figure 3.4: South Marsh Road (West of Hobson Way) Average Weekday Profile



Hobson Way (North of South Marsh Road)

- Average Weekday Morning Peak (two-way): 210 vehicles.
- Average Weekday Evening Peak (two-way): 168 vehicles.
- Annual Average Weekday Traffic (two-way): 1,501 vehicles

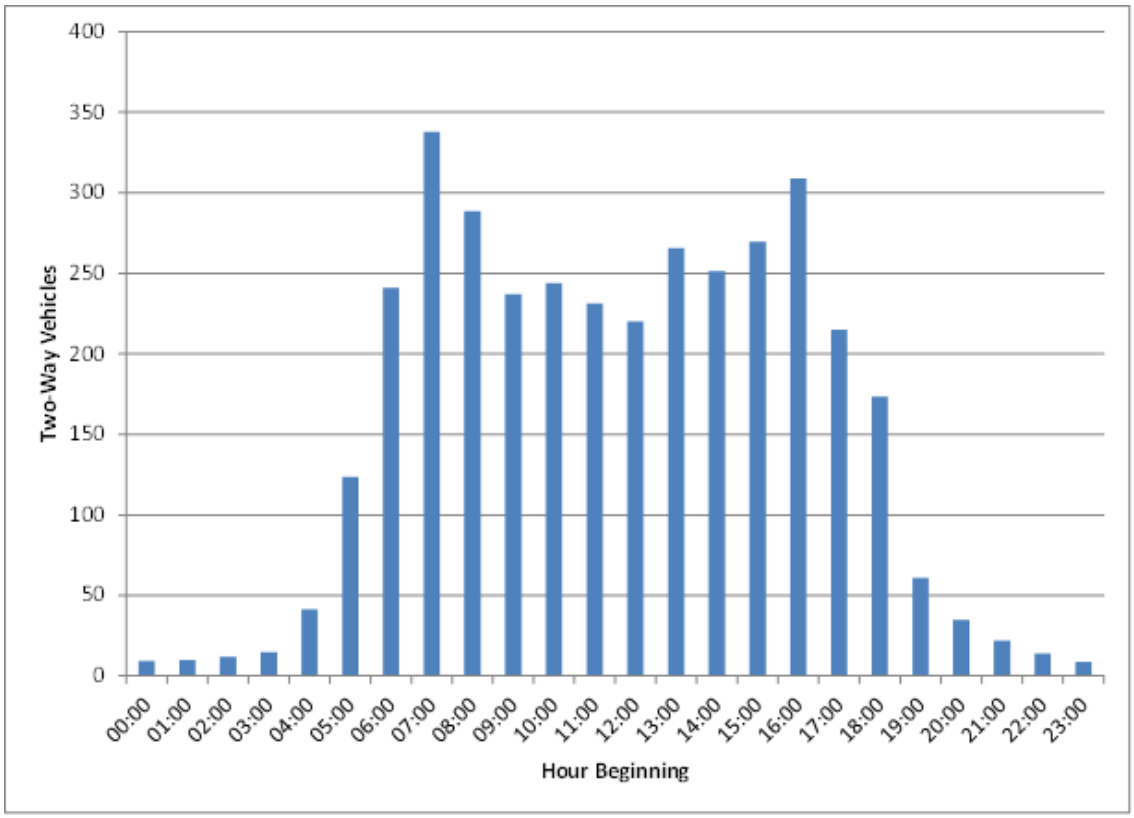
Figure 3.5: Hobson Way (North of South Marsh Rd) Average Weekday Profile



Kiln Lane (West of Hobson Way)

- Average Weekday Morning Peak (two-way): 338 vehicles.
- Average Weekday Evening Peak (two-way): 309 vehicles.
- Annual Average Weekday Traffic (two-way): 3,635 vehicles.

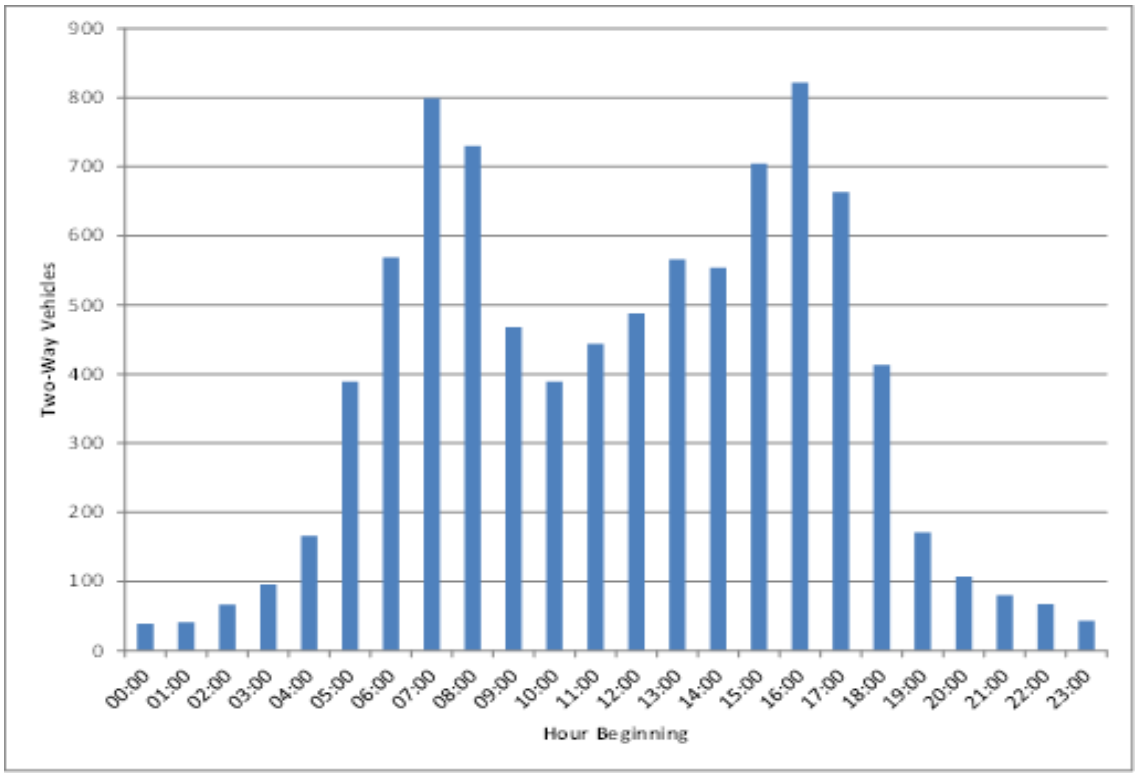
Figure 3.6: Kiln Lane Average Weekday Profile



A1173 (West of North Moss Lane)

- Average Weekday Morning Peak (two-way): 799 vehicles.
- Average Weekday Evening Peak (two-way): 822 vehicles.
- Annual Average Weekday Traffic (two-way): 8,875 vehicles.

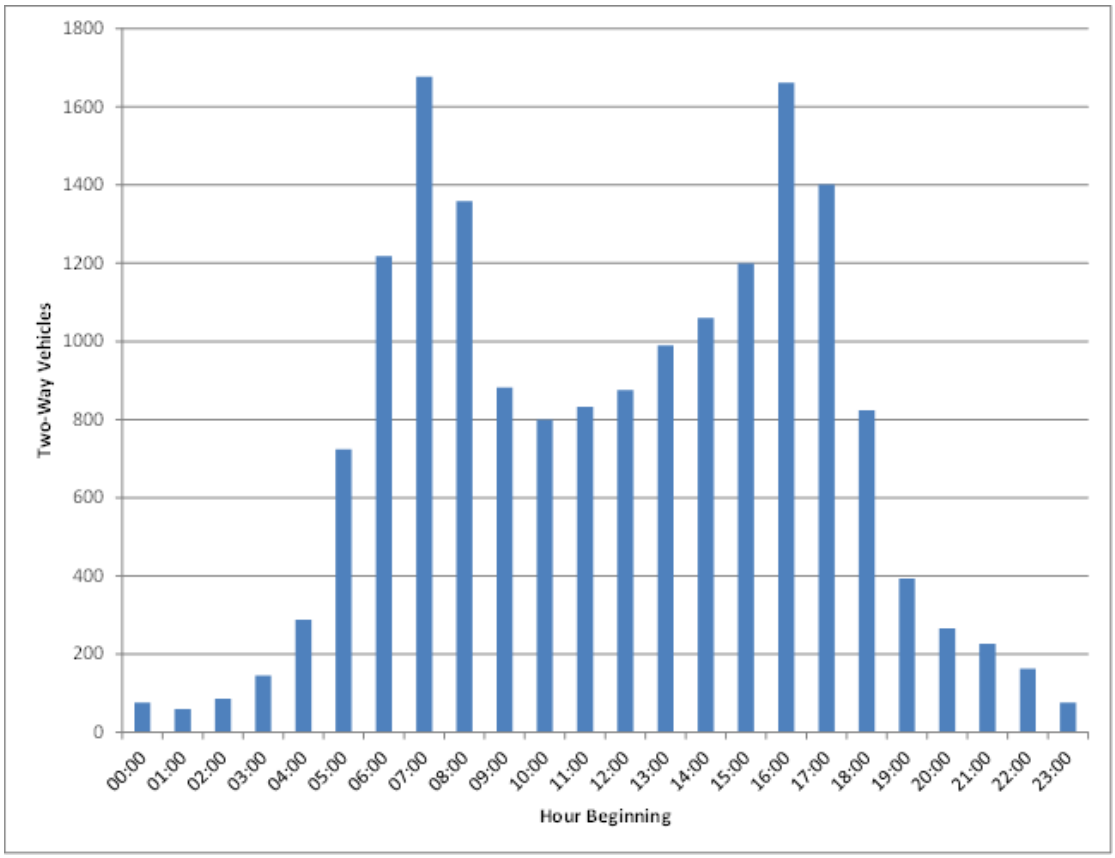
Figure 3.7: A1173 (West of North Moss Lane) Average Weekday Profile



A1173 (North of A180)

- Average Weekday Morning Peak (two-way): 1,677 vehicles.
- Average Weekday Evening Peak (two-way): 1,662 vehicles.
- Annual Average Weekday Traffic (two-way): 17,281 vehicles.

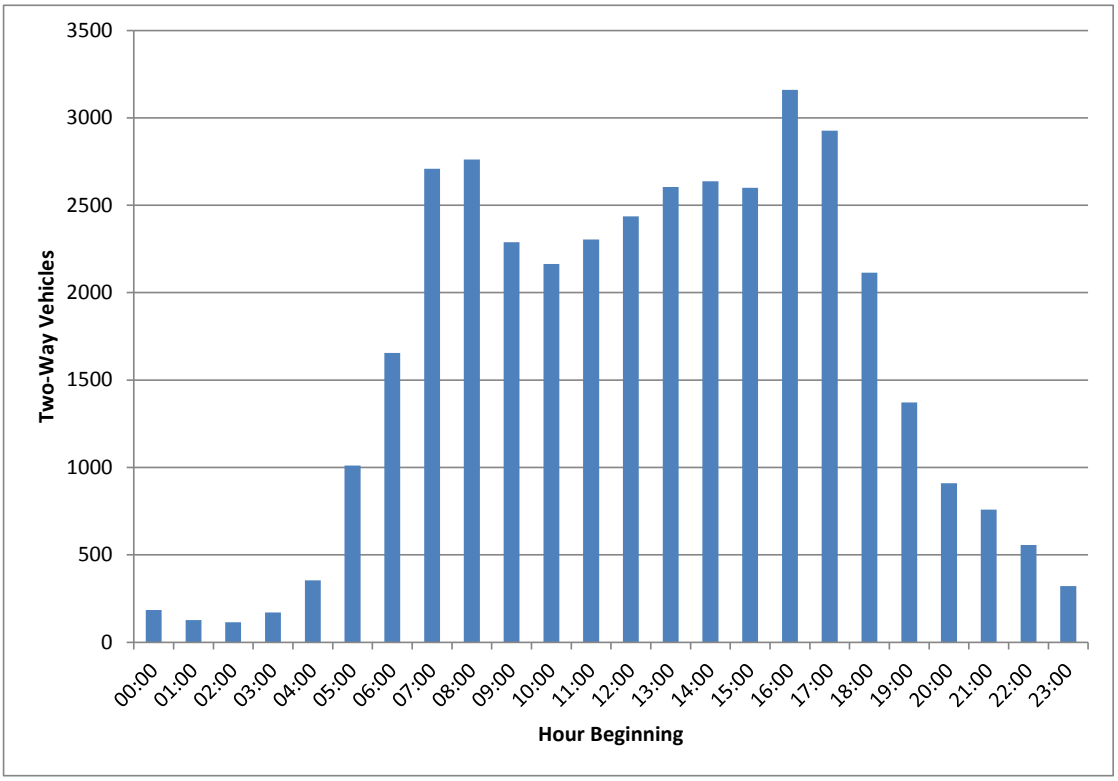
Figure 3.8: A1173 (North of A180) Average Weekday Profile



A180 Westgate (East of Westgate Roundabout)

- Average Weekday Morning Peak (two-way): 2,762 vehicles.
- Average Weekday Evening Peak (two-way): 3,160 vehicles.
- Annual Average Weekday Traffic (two-way): 38,240 vehicles.

Figure 3.9: A180 Westgate (East of Westgate Roundabout) Average Weekday Profile



4.0 REVIEW OF ACCESS BY SUSTAINABLE TRANSPORT MODES

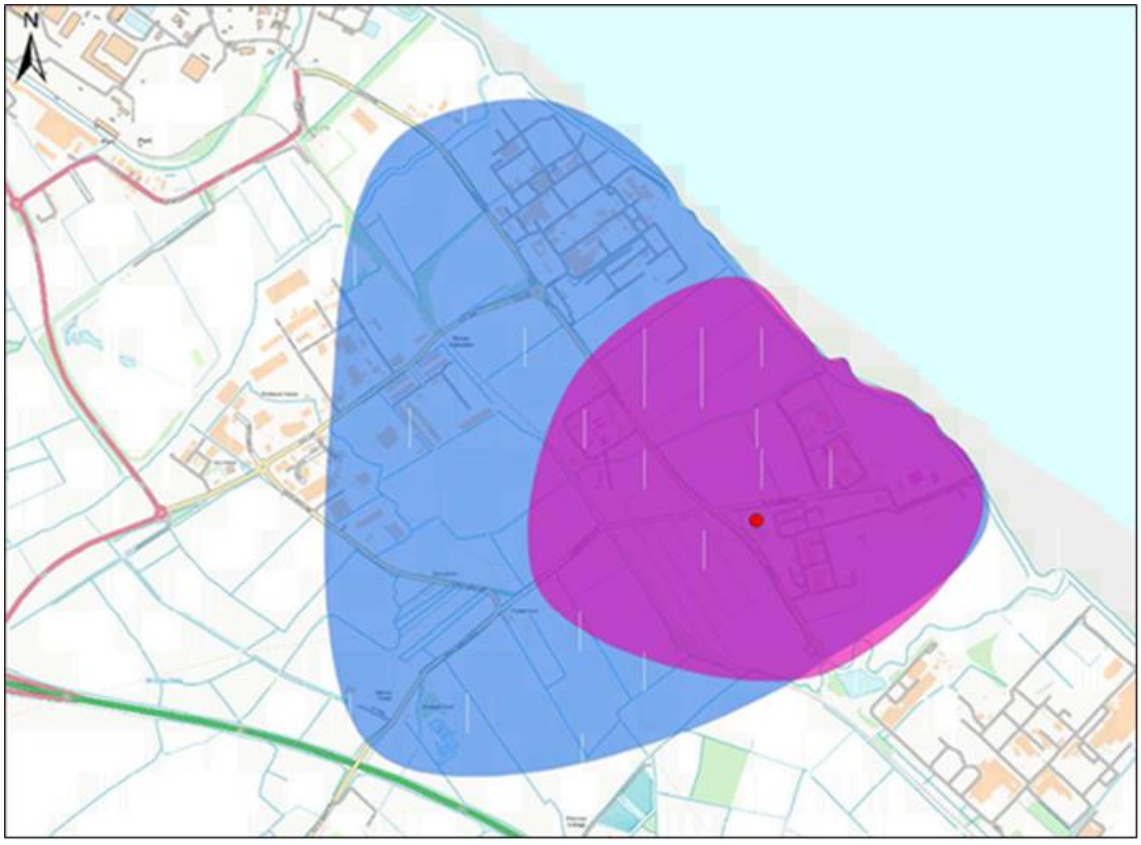
Overview

4.1 The Proposed Development is located in a remote semi-rural/ industrial area located some distance away from any major residential areas. Given its remote location and the proposed shift patterns to be worked by operational staff, opportunities to walk, cycle or use public transport to access the Site are likely to be limited. Notwithstanding, this section of the report considers the sustainable access modes available.

Walking

4.2 The Chartered Institution of Highways and Transportation (CIHT) document 'Providing for Journeys on Foot' (2000) suggests a maximum walking distance of 2 km. Figure 4.1 below shows a 1 km and 2 km walking catchment area from the Proposed Development.

Figure 4.1: 1 km / 2 km Walking Catchment Area



4.3 Figure 4.1 shows that apart from some properties located off South Marsh Road to the north of the A180 there are no major residential areas within a 2 km walking distance of the Site. In terms of pedestrian facilities in the vicinity of the Site, a footway approximately 2 m wide is provided along the western kerbline of Hobson Way. No footways are provided on South Marsh Road.

4.4 It is not therefore anticipated that walking trips would likely represent a practical travel mode for staff or visitors.

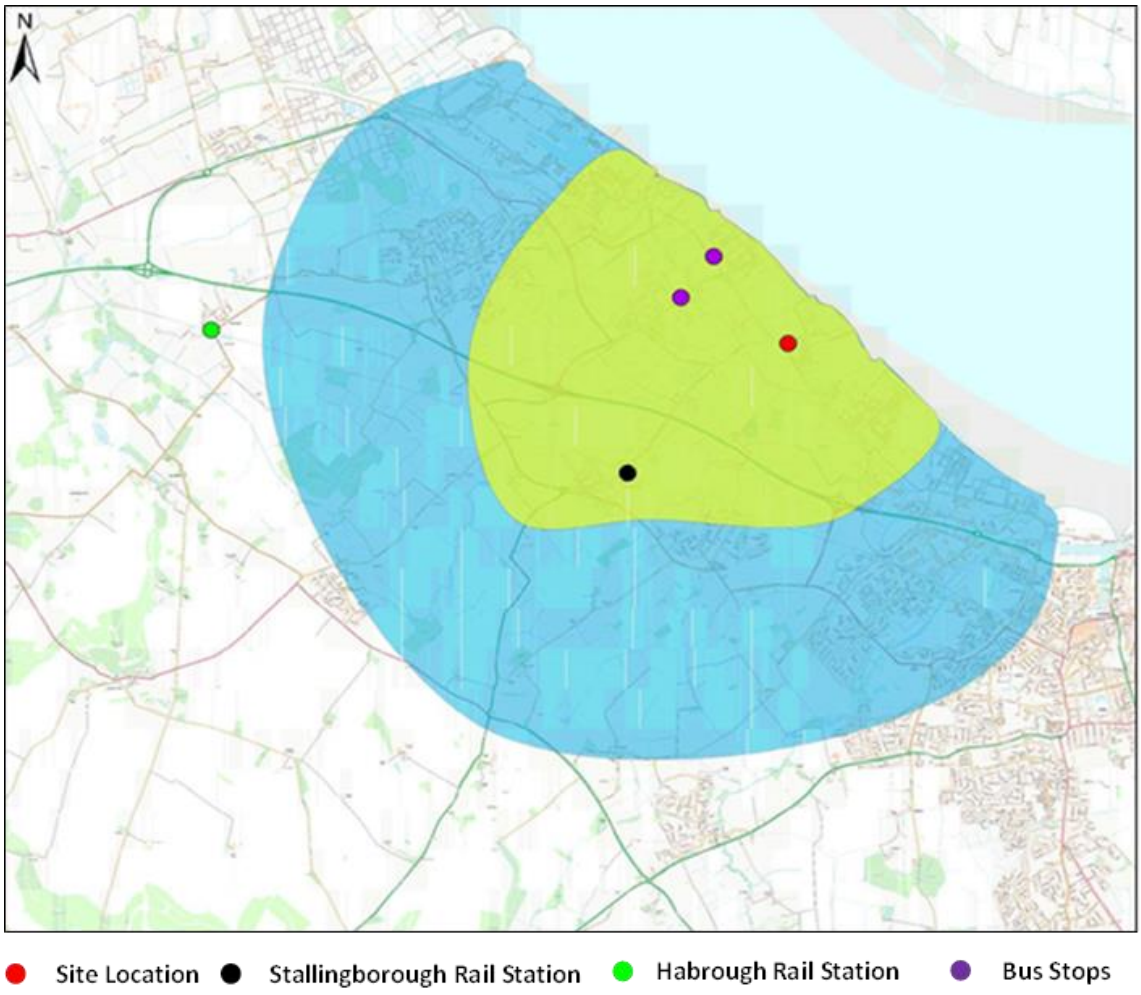
Cycling

4.5 Cycling is considered to be a viable alternative to that of the private car for journeys up to 8 km from the Site, providing a healthy and environmentally friendly form of transport.

4.6 In respect of acceptable cycle distances, 'Local Transport Note 2/08: Cycling Infrastructure Design', published by the Department for Transport states that many utility cycle trips are less than 3 miles (approximately 5 km), but for commuter journeys a distance of over 5 miles (approximately 8 km) is not uncommon.

4.7 Taking this into account, a plan illustrating the indicative 5 km and 8 km cycle catchment area from the Proposed Development is shown in Figure 4.2.

Figure 4.2: 5 km / 8 km Cycling Catchment Area



4.8 Figure 4.2 shows Healing, Great Coates, Stallingborough, and Immingham are within an 8 km cycle distance of the Site.

4.9 Within the vicinity of the Site there are no dedicated traffic-free cycle routes. However North East Lincolnshire Council does promote a leisure cycle route known as the Fishermen & Ships. This is a 12 km circular route which starts and finishes at Grimsby Leisure Centre and heads north east to the coast before heading north to South Marsh Road and then routing west along South Marsh Road past the power station to Stallingborough before heading south east back along Great Coates Road.

4.10 Whilst the lack of dedicated traffic-free cycle routes is not considered to be an issue for experienced cyclists, the surrounding road network is regularly used by HGVs given its industrial nature and therefore may not represent an attractive option for less experienced cyclists.

Public Transport

4.11 The CIHT guidance document 'Planning for Public Transport in Developments' recommends that 400 m is the desirable walking distance to a bus stop from a new development. The nearest bus stop to the Site is located approximately 1.9 km to the north of the Site on Laporte Road. A further bus stop is located along Europa Way off Kiln Lane approximately 2 km from the Site.

4.12 These bus stops are served by the 5M bus service. The frequency of this service is shown in Table 4.1.

Table 4.1: Bus Service Frequency

SERVICE	ROUTE	FREQUENCY		
		Mon - Fri	**Sat**	**SUN**
5M	Immingham - Grimsby	06:49, 07:49, 16:15, 17:10	No Service	No Service

4.13 In summary these bus stops are located outside of the acceptable walking distance to a bus stop and given the low frequency of service represents an unattractive option for staff and visitors. In addition there are no footways present on South Marsh Road between the junction with Hobson Way and the Site.

5.0 PERSONAL INJURY ACCIDENT DATA

Overview

5.1 Accident data has been taken into consideration in line with Planning Practice Guidance titled 'Travel plans, transport assessments and statements in decision taking' published in March 2014 which requires analysis of any road traffic incidents which have occurred within the most recent five year period within the locality of the Site.

5.2 Personal Injury Accident (PIA) data has been obtained from the Crashmap website (www.crashmap.co.uk) for the period 1st January 2013 to 31st December 2017 for the areas of consideration which includes the area incorporating the A180/A1173 interchange, A1173, Kiln Lane, Hobson Way and South Marsh Road and the area incorporating the A180 Westgate Roundabout. The accident study areas are shown in Figures 5.1 and 5.2.

Figure 5.1: Accident Study Area

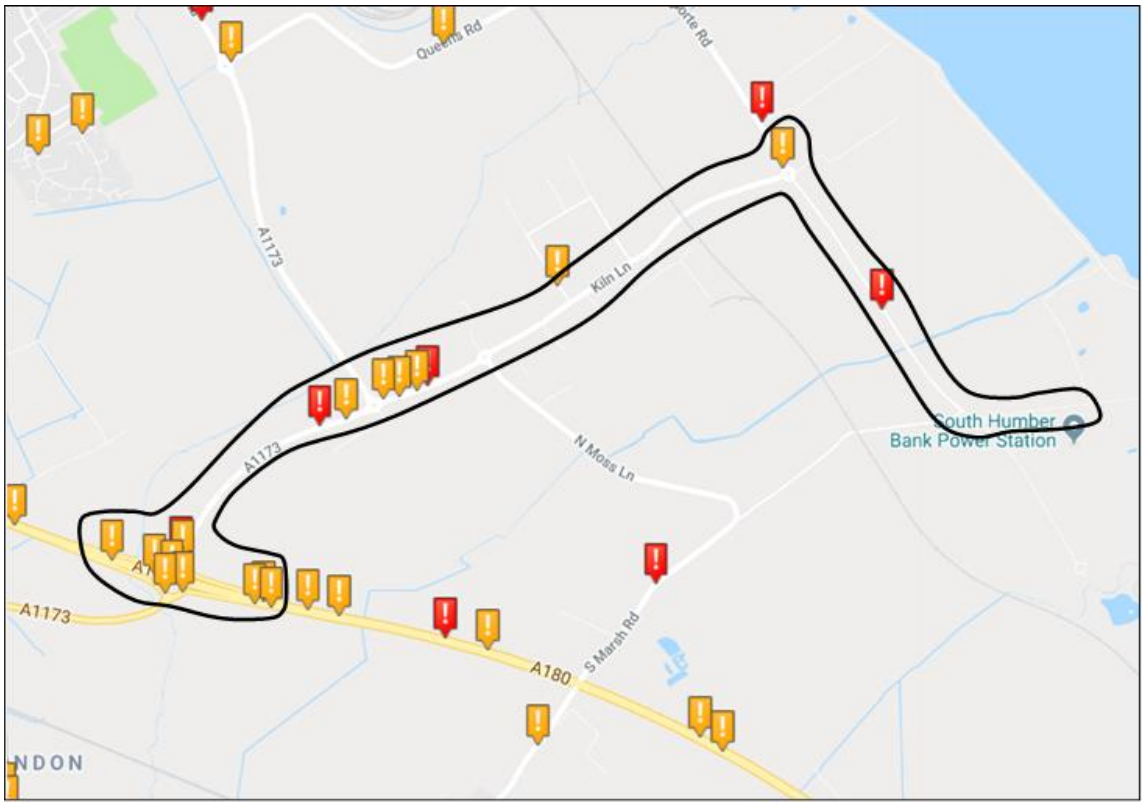
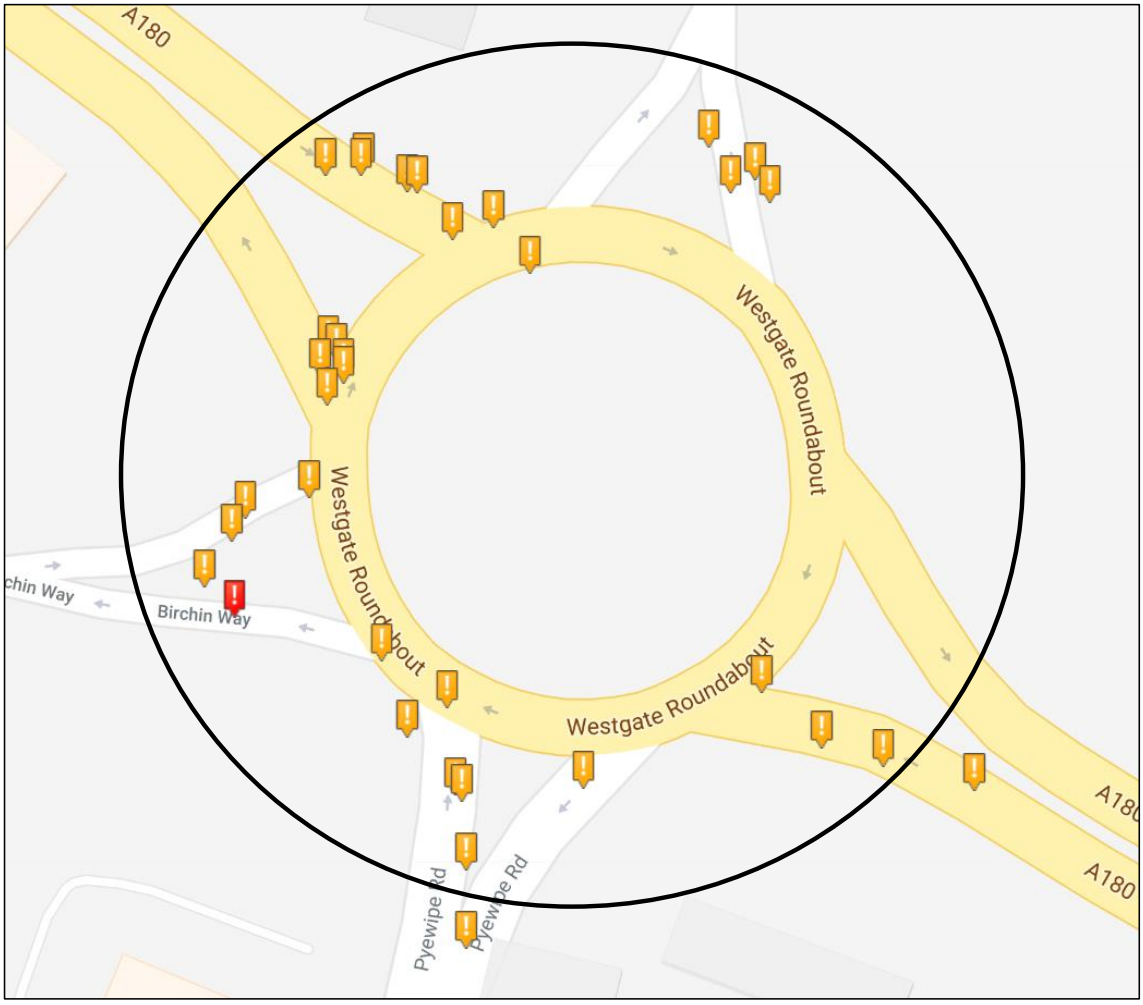


Figure 5.2: Westgate Roundabout Accident Study Area



5.3 The Accident Study Area shown in Figure 5.1 identified a total of 14 reported accidents over the past 5 years of which 10 were classed as slight in severity and 4 serious severity. A breakdown of severity of the accidents over the study period has been provided in Table 5.1 below.

Table 5.1: Accident Summary

YEAR	TOTAL ACCIDENTS	SEVERITY		
		Slight	Serious	Fatal
2013	2	2	0	0
2014	1	1	0	0
2015	5	3	2	0
2016	5	3	2	0
2017	1	1	0	0
TOTAL	**14**	**10**	**4**	**0**

5.4 The accident study area shown in Figure 5.2 incorporating the A180 Westgate Roundabout identified a total of 35 reported accidents over the past 5 years of which 34 were classed as slight in severity and 1 serious severity. A breakdown of severity of the accidents over the study period has been provided in Table 5.2.

Table 5.2: A180 Westgate Roundabout Accident Summary

YEAR	TOTAL ACCIDENTS	SEVERITY		
		Slight	Serious	Fatal
2013	10	10	0	0
2014	9	9	0	0
2015	6	6	0	0
2016	6	6	0	0
2017	4	3	1	0
TOTAL	**35**	**34**	**1**	**0**

5.5 Further detailed analysis is provided below. Full accidents reports are provided within Annex 4.

A180 / A1173 Interchange

5.6 Over the five year study period a total of six accidents occurred, three located at the junction and three along the A180 westbound off slip approach.

5.7 Of the six accidents, five were of slight severity and one serious severity. Analysis of the accident reports have identified that the incidents were due to driver error due to lack of awareness of their surrounding and poor judgement as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.3 below.

Table 5.3: A180 / A1173 Interchange

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
Gyratory (vicinity of A1173 South Approach)	15.05.15	Slight	2	Collision
A1173 (Northern Approach)	22.02.16	Serious	1	Collision
	06.08.16	Slight	2	Rear End Shunt
A180 Northbound Off-Slip	10.12.13	Slight	2	Rear End Shunt
	30.06.15	Slight	2	Rear End Shunt
	06.12.16	Slight	2	Rear End Shunt

A1173 Corridor

5.8 Over the five year study period a total of two accidents occurred along the A1173 corridor. Both accidents occurred approximately 200 m west from its junction with the Kiln Lane roundabout. Of these one was classified as slight in severity and one serious in severity. Analysis of the incident reports have identified that both incidents were due to driver error due to lack of awareness of their surrounding and poor judgement as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.4 below.

Table 5.4: A1173 Corridor

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
04.03.13	Slight	3	Rear End Shunt
16.10.15	Serious	2	Rear End Shunt

A1173 / Kiln Lane Roundabout

5.9 Over the five year study period one accident occurred at this junction which was classed as slight in severity. Analysis of the accident report has identified that the incident was due to driver error due to lack of awareness of their surrounding and poor judgement as opposed to any physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.5 below.

Table 5.5: A1173 / Kiln Lane Roundabout

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
25.07.14	Slight	2	Rear End Shunt

Kiln Lane Corridor

5.10 Over the five year study period a total of three accidents were recorded along the Kiln Lane corridor between its junctions with the A1173 to the west and Hobson Way / Laporte Road to the east. Of the three accidents that were reported two were classified as slight in severity and one serious.

5.11 Analysis of the accident reports have identified that the accidents were due to driver error due to lack of awareness of their surrounding and poor judgement as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.6 below.

Table 5.6: Kiln Lane Corridor

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
22.05.15	Serious	2	Collision – due to vehicle undertaking a U turn manoeuvre
29.12.15	Slight	2	Collision
21.04.16	Slight	3	Rear End Shunt

Kiln Lane / Hobson Way / Laporte Road Junction

5.12 Over the five year study period one accident was reported at the four arm roundabout, which was classed as slight in severity.

5.13 Analysis of the accident report has identified that the incident was due to driver error due to lack of awareness of their surrounding and poor judgement as opposed to any

physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.7 below.

Table 5.7: Kiln Lane / Hobson Way / Laporte Road Roundabout

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
03.01.17	Slight	2	Collision – vehicle struck a bollard

Hobson Way Corridor

5.14 Over the study period one accident occurred along the Hobson Way corridor approximately 580 metres south of the Kiln Lane roundabout and was classed as serious in severity.

5.15 Analysis of the accident report has identified that the accident was due to driver error as opposed to any physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.8 below.

Table 5.8: Hobson Way Corridor

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
14.07.16	Serious	1	Driver Loss of Control

5.16 Given the small number of accidents identified within the search area between the Site and the A180, it is considered there are no highway safety concerns in the vicinity of the Site.

A180 Westgate Roundabout

5.17 Over the five year study period, thirty-five accidents were recorded at this junction of which thirty-four were of slight severity and one was of serious severity. A breakdown of severity of the accidents over the study period has been provided in Table 5.2 and shows the yearly number of accidents occurring at the junction has reduced over the last five years.

5.18 Analysis of the accident reports have identified that the incidents were due to driver error due to lack of awareness of their surrounding and poor judgement as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.8 below.

Table 5.8: A180 Westgate Roundabout

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
A180 Eastern Arm	18/06/16	Slight	2	Vehicle proceeding normally along the carriageway collides with a slowing/ stopping vehicle
	22/10/16	Slight	2	Rear end shunt with vehicle colliding into a slowing/ stopping vehicle. Light conditions are dark but street

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				lighting is present and lit
	23/10/16	Slight	1	Motorbike (over 50cc and up to 125cc) proceeding normally along the carriageway
	22/09/17	Slight	2	Two vehicles proceeding normally along the carriageway
A180 Western Arm	17/01/13	Slight	2	Rear end shunt with two vehicles moving off. Road conditions: Frost or Ice
	07/02/13	Slight	2	Two vehicles proceeding normally along the carriageway
	11/04/13	Slight	3	Rear end shunt involving three vehicles, all proceeding normally along the carriageway
	18/06/13	Slight	2	Two vehicles proceeding normally along the carriageway
	02/08/13	Slight	2	Vehicle proceeding normally along the carriageway collides with a van/goods vehicle (3.5 tonnes mgw and under) in the act of turning left
	07/10/13	Slight	2	Vehicle is in the act of turning left collides with vehicle proceeding normally along the carriageway
	31/10/13	Slight	2	Rear end shunt involving two vehicles proceeding normally along the carriageway
	24/02/14	Slight	2	Goods vehicle (7.5 tonnes mgw and over) changing lanes to the right collides with nearside of vehicle proceeding normally along the carriageway
	14/04/14	Slight	2	Broadside (T-Bone) collision with two vehicles proceeding normally along the

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				carriageway
	28/04/14	Slight	2	Broadside (T-Bone) collision with motorcycle (125cc-500cc) in the act of turning left collides with vehicle (offside) proceeding normally along the carriageway. Light conditions are dark but street lighting is present and lit
	22/10/14	Slight	2	Rear end shunt with two vehicles proceeding normally along the carriageway
	09/02/15	Slight	2	Broadside (T-Bone) collision with vehicle proceeding normally along the carriageway colliding with a pedal cycle
	20/03/15	Slight	2	Rear end shunt with goods vehicle (7.5 tonnes mgw and over) colliding with rear of a vehicle waiting to proceed normally but is held up. Road conditions: Wet or Damp
	13/07/16	Slight	2	Rear end shunt with vehicle slowing down or stopping colliding with the rear of a vehicle moving off
Pyewipe Rd	10/05/13	Slight	2	Broadside (T-Bone) collision with vehicle proceeding normally along the carriageway colliding with vehicle (nearside) in the act of turning right
	11/02/14	Slight	2	Vehicle passing a stationary vehicle on its offside collides with vehicle waiting to turn right
	20/07/14	Slight	2	Rear end shunt with vehicle in the act of

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				turning left and vehicle waiting to turn left
	28/10/14	Slight	2	Vehicle is waiting to proceed but is held up. Rear end shunt from vehicle proceeding normally
	10/11/15	Slight	2	Two motorcycles (over 50cc and up to 125cc; and over 500cc) proceeding normally along the carriageway. Light conditions are dark but street lighting is present and lit
	18/07/16	Slight	2	Rear end shunt with vehicle proceeding normally along the carriageway colliding with a slowing or stopping vehicle
	12/07/17	Slight	2	Collision between a van/goods vehicle (3.5 tonnes mgw and under) proceeding normally and vehicle changing lane to the right
	18/09/17	Slight	1	Minibus (8-16 passenger seats) in the act of turning right collides with kerb and lamp post
Birchin Way	25/10/13	Slight	2	Vehicle is waiting to proceed but is held up. Rear end shunt from vehicle proceeding normally
	04/01/14	Slight	2	Collision between vehicle moving off (nearside) and vehicle proceeding normally along the carriageway (offside). Road surface is wet/damp and light conditions are dark with street lighting present and lit
	02/08/15	Slight	2	Rear end shunt with vehicle proceeding normally along the

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				carriageway colliding into vehicle moving off
	17/10/16	Slight	2	Vehicle is waiting to proceed but is held up. Rear end shunt from vehicle proceeding normally
	20/09/17	Serious	2	Collision between vehicle in the act of turning left and a pedal cycle proceeding normally along the carriageway. Light conditions are dark but street lighting is present and lit
Moody Lane	19/09/13	Slight	2	Rear end shunt with vehicle moving off colliding into motorcycle (50cc and under) waiting to turn left
	25/04/14	Slight	2	Rear end shunt with pedal cycle colliding into the rear of vehicle proceeding normally along the carriageway. Road condition: Wet or Damp
	20/07/15	Slight	2	Two vehicles in the act of turning right collide
	17/11/15	Slight	2	Rear end shunt with van/goods vehicle (3.5 tonnes mgw and under) moving off colliding into vehicle in the act of turning right

6.0 PROPOSED DEVELOPMENT

6.1 The Proposed Development comprises an energy from waste power station which will generate energy through the controlled combustion of refuse derived fuel (RDF) and would have a maximum gross electrical output of 49.9 MW.

6.2 The annual fuel throughput will vary depending on the net calorific value (NCV) of fuel which could range from 9 to 14 MJ/kg. To ensure a robust assessment, the Transport Assessment considers the traffic associated with the lowest NCV fuel, which would equate to approximately 753,500 tonnes per annum (tpa).

6.3 Subject to being granted planning consent, it is anticipated that construction could commence in 2019 and last circa 36 months, with the peak of construction anticipated to be in 2020. The Proposed Development is programmed to open in 2022.

6.4 During construction, the Proposed Development would require a maximum of around 750 workers per day at the peak of construction. Once operational, the Proposed Development would create around 56 new permanent full time jobs.

6.5 It is expected that each year the Proposed Development will be taken offline for approximately three weeks to allow for invasive maintenance activities such as internal inspection of the boiler. Approximately every five to six years the facility will be taken offline for a major outage for substantial maintenance activities such as replacement sections of the boiler. Such a major outage is likely to last approximately five weeks where it could be expected that up to 200 staff could be on Site on any one day.

6.6 The activities involved in the decommissioning process for the Proposed Development are not yet known in detail, as it has a design life of approximately 30 years. There would be expected to be some traffic movements associated with the removal (and recycling, as appropriate) of material arising from demolition and potentially the import of materials for land restoration and re-instatement. However, vehicle numbers are not expected to be higher than those experienced during the construction or operational period.

Site Access and Car Parking

Vehicle Access

6.7 Access to the Proposed Development will be provided via a new access at the eastern end of the adopted section of South Marsh Road. A layout plan showing the proposed access is provided in Annex 5.

6.8 Incoming HGVs will enter the Site and proceed to the two incoming weighbridges. Should both weighbridges be occupied, an HGV holding area is to be provided accommodating up to six HGVs to prevent HGV stacking on the access road.

6.9 After weighing the HGVs will proceed to the tipping hall where they will be directed to a vacant tipping bay. On completion of the tipping operation, the vehicles will leave the tipping hall via a separate exit. A one-way system will be operated around the Site to reduce the risk of congestion and collisions.

6.10 The weight of outgoing vehicles will be recorded at the outgoing weighbridges as they leave the Site.

6.11 The layout also includes a separate lane to either side of the incoming and outgoing weighbridges for use by staff and visitor vehicles.

6.12 A Delivery and Servicing Plan demonstrating how deliveries and servicing will be managed is included within Annex 24.

Car Parking

6.13 It is proposed that 57 parking spaces will be provided on Site to accommodate proposed staffing levels at the Site. This level of car parking has been identified as being suitable to accommodate proposed staffing levels for the Proposed Development including a requirement for additional spaces during shift change over periods, visitor provision and a level of site flexibility. Review of anticipated staffing levels identifies a regular parking demand of up to 42 spaces during shift change periods (see Table 7.2 below). It is proposed that 5% of the total spaces will be disabled spaces and is in accordance with the Supplementary Planning Guidance Mobility and Parking Standards Adopted April 2004.

Proposed Site Operating Hours and Staffing Levels

Site Operation and Delivery Periods

6.14 The Proposed Development will operate twenty four hours a day, seven days a week, with occasional offline periods for maintenance.

6.15 Fuel will be delivered by road, with deliveries assumed to be between the hours of 06:00 and 18:00 seven days a week, including Bank Holidays but excluding Christmas Day, Boxing Day and New Year's Day.

6.16 Although the timings allow for deliveries every day of the week, it is likely that the majority of fuel deliveries will be Monday to Friday.

6.17 Rail transport of fuel is not considered to be feasible for the Proposed Development, given that fuel contracts have not yet been agreed and it is not known whether the suppliers will be rail connected, and the Site is well connected by road.

Proposed Staffing Levels

6.18 It is estimated that around 56 staff will be required on a shift basis to be spread over a 24 hour period. Site operation is likely to be undertaken via three 8 hr shifts (06:00 – 14:00, 14:00 – 22:00, and 22:00 – 06:00).

6.19 It is anticipated there will be a maximum of 14 staff per shift, with an additional 14 day / management staff being employed at the Proposed Development.

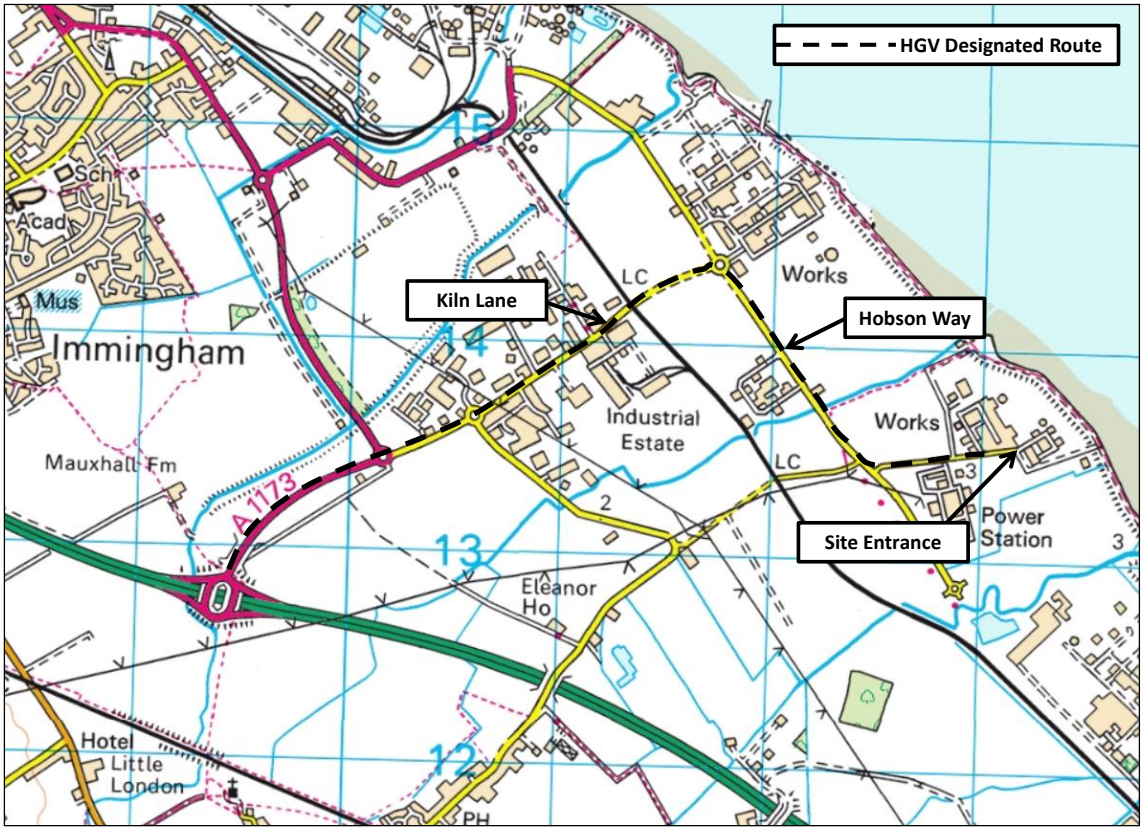
6.20 Staff will be encouraged to use sustainable modes of travel to access the Site where possible. A Framework Operational Travel Plan is included in Annex 6.

Operational HGV Routing

6.21 It is proposed that all operational HGV traffic to / from the Proposed Development will be required to route to / from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road (see Figure 6.1). This will be formalised by a routing agreement and will be rigorously enforced by the Proposed Development operator.

6.22 The Proposed Development operator will encourage the public to report any incidents regarding any breaches of the routing agreement to the Site Manager together with information on the location of the HGV, direction of travel and its number plate / operator. This information will allow the Site Manager to take appropriate action to avoid any future incidents.

Figure 6.1: Designated Operational HGV Route



7.0 DEVELOPMENT TRIP GENERATION AND ASSIGNMENT

Operational HGV Traffic Levels

7.1 Calculation of the number of average fuel deliveries per day is set out below and is likely be in the region of 202 HGVs per day based on deliveries occurring Monday to Friday (as a worst case scenario).

Calculation of Fuel Deliveries

- Fuel Tonnes per Annum: 753,500 tpa
- Average HGV Payload: 16 tonnes
- Fuel Deliveries per Year: 753,500 tpa / 16 t = 47,094 Fuel Deliveries per Year
- Assuming all Deliveries occur Monday to Friday between 06:00 and 18:00 = 260 Delivery Days per Year, but allowing for outages this is expected to be reduced to c.233 Delivery Days per Year
- Fuel Deliveries per Day: 47,094 / 233 Days = 202 Average Fuel Deliveries per Day (one-way)
- Fuel Deliveries per Hour: 202 Deliveries per Day / 12 Hours = 17 Average Fuel Deliveries per Hour (one-way).

7.2 To estimate the peak daily and hourly traffic flow, the following variables have been applied to ensure a robust assessment.

- Daily variation of fuel deliveries will occur due to sourcing and fuel suppliers. As an approximation, it is estimated that daily traffic flows might vary by +/- 20%. This imposes a 20% increase on the average daily flows.
- Hourly flows are difficult to control, depending on HGV drivers and loading times at other facilities. It is estimated that the hourly peak flow during a day is likely to be about twice that of the average hourly flow.

7.3 Based on the above variables, peak daily and hourly Fuel Deliveries are as follows:

- Daily Peak Fuel Deliveries: 242 HGVs (one-way);
- Hourly Peak Fuel Deliveries: 34 HGVs (one-way).

7.4 In addition, there would be a maximum of 5 HGV consumable deliveries per day (5 in + 5 out) or 1 in 1 out during the hourly peak. There would also be HGV movements associated with bottom ash and flue gas treatment residues with a maximum of 65 HGVs per day (65 in + 65 out) or 9 in and 9 out during the hourly peak.

7.5 Total HGV movements at the Site would therefore be 312 in and 312 out per day and a maximum of 44 deliveries during the hourly peak.

Predicted Operational HGV Arrival / Departure Profile

7.6 Deliveries of fuel are proposed to occur between the hours of 06:00 and 18:00. To arrive at a daily profile over the working day, weighbridge records for a similar energy from waste facility known as Ferrybridge Multifuel 1 operated by SSE, near Wakefield have been analysed for the month September 2016.

7.7 Table 7.1 provides the anticipated hourly profile of HGV movements at the Proposed Development and demonstrates that peak hour development HGV demand is predicted to occur during the period 06:00 – 07:00 when 87 HGV movements (in and out) could be expected to take place.

Table 7.1: Operational HGV Hourly Profile

HOUR BEGINNING	ARRIVALS	DEPARTURES	TOTAL
06:00	44	43	87
07:00	33	33	66
08:00	36	33	69
09:00	36	34	70
10:00	26	31	57
11:00	29	27	56
12:00	29	27	56
13:00	26	25	51
14:00	20	20	40
15:00	16	18	34
16:00	13	14	27
17:00	4	5	9
18:00	0	2	2
Total	**312**	**312**	**624**

Predicted Staff Traffic Demand

7.8 It is estimated that around 56 staff will be employed at the Proposed Development. Given the 24 hour operation of the facility a staff shift system will be in operation and is likely to be undertaken via three 8 hr shifts (06:00 – 14:00, 14:00 – 22:00, 22:00 – 06:00).

7.9 It is anticipated there will be a maximum of 14 staff per shift, with an additional 14 day / management staff being employed at the Site.

7.10 Given the remote location of the Site and the nature of the shift system, it is anticipated that the majority of staff would travel to the Site by car. To ensure a robust assessment, vehicle occupancy of one staff member per vehicle has been applied. The anticipated arrival / departure profile over the working day is shown in Table 7.2 below.

Table 7.2: Staff Arrival / Departure

HOUR BEGINNING	ARRIVALS	DEPARTURES	CAR PARK OCCUPANCY
05:00	14		28
06:00		14	14
07:00	14		28
08:00			28
09:00			28
10:00			28
11:00			28
12:00			28
13:00	14		42
14:00		14	28
15:00			28
16:00			28
17:00		14	14
18:00			14
19:00			14
20:00			14
21:00	14		28
22:00		14	14
23:00			14
00:00			14

Predicted Total Traffic Demand

7.11 Combining the above staff car trip demand and the predicted operational HGV traffic levels, the overall daily vehicle demand to / from the Proposed Development is set out in Table 7.3 below.

Table 7.3: Total Daily Operational Vehicle Traffic Profile

HOUR BEGINNING	STAFF ARRIVAL	STAFF DEPART	HGV ARRIVAL	HGV DEPART	TOTAL ARRIVAL	TOTAL DEPART
05:00	14	0	0	0	14	0
06:00	0	14	44	43	44	57
07:00	14	0	33	33	47	33
08:00	0	0	36	33	36	33
09:00	0	0	36	34	36	34
10:00	0	0	26	31	26	31
11:00	0	0	29	27	29	27
12:00	0	0	29	27	29	27
13:00	14	0	26	25	40	25
14:00	0	14	20	20	20	34
15:00	0	0	16	18	16	18
16:00	0	0	13	14	13	14
17:00	0	14	4	5	4	19
18:00	0	0	0	2	0	2
19:00	0	0	0	0	0	0
20:00	0	0	0	0	0	0
21:00	14	0	0	0	14	0
22:00	0	14	0	0	0	14
23:00	0	0	0	0	0	0
00:00	0	0	0	0	0	0
00:00 – 24:00	**56**	**56**	**312**	**312**	**368**	**368**

Assignment of Operational Development Traffic

Operational HGV Traffic Assignment

7.12 Operational HGV movements to / from the Proposed Development will be to / from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road. HGV assignment at the A180 Stallingborough Interchange has been undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split. The HGV assignment is provided in Annex 7.

7.13 The predicted level of operational HGVs during the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 8.

Staff Assignment

7.14 Staff trips have been assigned to the network based on the 2011 Journey to Work Census data (www.nomisweb.co.uk) and is based on those people who currently work within the super output area in which the Proposed Development is located. The staff assignment is provided in Annex 9.

7.15 The predicted level of operational staff vehicle movements during the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 10.

Combined Traffic Demand

7.16 The combined HGV and staff traffic demand for the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 11.

8.0 GROWTH FACTORS

8.1 The Proposed Development is anticipated to be fully operational in 2022 and this has therefore been identified as the assessment year for this Transport Assessment. Following scoping discussions with Highways England, a future operational year of 2028 has also been assessed.

8.2 Traffic growth factors for the North East Lincolnshire District have been obtained from TEMPRO Version 7.2 software. The use of TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

8.3 The TEMPRO software provides a local adjustment to the National Trip End Model to provide localised growth factors for geographical areas.

8.4 The local growth factors to be applied to the 2018 Base Flows for a principal road within a rural area are shown in Table 8.1.

Table 8.1: Total Daily Operational Vehicle Traffic Profile

ROAD TYPE	DATE RANGE	AM PEAK	PM PEAK
Principal	2018 - 2022	1.0551	1.0529
Principal	2018 - 2028	1.1185	1.1148

8.5 The above growth factors have been applied to the 2018 traffic flows to provide the future 2022 and 2028 AM and PM network peak flows (see Annex 12).

9.0 COMMITTED DEVELOPMENT

9.1 The following committed or likely developments have been identified that need to be incorporated into the future baseline and future year assessment:

North Beck Energy Centre (Ref: DM/0026/18/FUL)

9.2 A full planning application for the development of an energy recovery facility on land south of Queens Road, Immingham was granted in October 2018.

9.3 The planning application was supported by a Transport Assessment and included an estimate of vehicle trips for the AM and PM peak periods. Assignment of development flows to the local road network are shown in Annex 13.

9.4 Table 9.1 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.1: North Beck Energy Centre Trip Generation

	Car / LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	24	0	7	3
16:00 – 17:00 PM Peak	1	9	0	0
00:00 – 24:00 24 Hour	49	49	126	126

Stallingborough Employment Site, Kiln Lane, Stallingborough (Ref: DM/0105/18/FUL)

9.5 A hybrid application seeking outline consent for the development of up to 120,176 sqm of B1 (Business), B2 (Industrial) and B8 (Storage and Distribution) and a full application for the creation of a new roundabout, new access roads, associated highway works, substations, pumping stations, drainage and landscaping was submitted in March 2018 and is awaiting a decision.

9.6 It is proposed that the development will be built out in three phases over a period of 14 years between 2018 and 2032:

- Phase 1A: 2018 – 2022
- Phase 1B: 2020 – 2024
- Phase 2: 2023 – 2032

9.7 For assessment purposes, it has been assumed that for 2022 opening year, all of Phase 1A is fully built out and 50% of Phase 1B. For the assessment year 2028 (future operation) it is assumed all of Phase 1A and Phase 1B is built out and 50% of Phase 2.

9.8 Tables 9.2 and 9.3 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period for both assessment years. Assignment of development flows to the local road network for future years 2022 and 2028 are shown in Annex 13.

Table 9.2: Stallingborough Employment Site Trip Generation (2022)

	Car / LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	97	33	9	15
16:00 – 17:00 PM Peak	38	95	18	12
00:00 – 24:00 24 Hour	772	772	257	257

Table 9.3: Stallingborough Employment Site Trip Generation (2028)

	Car / LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	148	52	18	31
16:00 – 17:00 PM Peak	63	153	39	25
00:00 – 24:00 24 Hour	1,206	1,206	539	539

End-of-life Tyre Pyrolysis Plant, Scandinavian Way, Stallingborough (Ref: DM/0333/17/FUL)

9.9 Full planning permission was granted in December 2017 to construct a waste tyre to energy pyrolysis plant at the disused Immingham Railfreight Terminal. The application was supported by a Transport Statement prepared by Distributed Energy Project Service (March 2017). This document identified that the facility would be expected to generate 20 two-way HGV trips over a 24 hour period. Assignment of development flows to the local road network for the AM and PM peak periods are shown in Annex 13.

9.10 Table 9.4 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.4: End of life Tyre Pyrolysis Plant Trip Generation

	Car / LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	5	0	2	2
16:00 – 17:00 PM Peak	0	5	2	2
00:00 – 24:00 24 Hour	5	5	20	20

Paragon / Kia Development, Kiln Lane Stallingborough (Ref: DM/0147/16/FUL)

9.11 Full planning permission was granted in June 2016 for an extension to the established vehicle processing business run by Paragon to meet Kia's requirements. The development proposals would see the change of use of agricultural land to additional external vehicle storage. The planning application was supported by a Transport Assessment. Assignment of development flows to the network for the AM and PM peak periods are shown in Annex 13.

9.12 Table 9.5 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.5: Paragon / Kia Development Trip Generation

	Car / LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	41	2	1	1
16:00 – 17:00 PM Peak	41	2	1	1
00:00 – 24:00 24 Hour	259	259	22	22

Renewable Power Facility, Kiln Lane (Ref: DM/0848/14/FUL)

9.13 Full planning permission was granted in April 2016 for the development of a renewable power facility for the production of electricity using pre-treated fuel feedstocks including tyres and carpets. The planning application was supported by a Transport Statement prepared by Les Henry Associates (July 2014). This document identified that up to one HGV trip per hour could be expected with a maximum of 10 HGVs per day. Assignment of development flows to the local road network for the AM and PM peak periods are shown in Annex 13.

9.14 Table 9.6 summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.6: Renewable Power Facility Trip Generation

	Car / LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	16	0	1	1
16:00 – 17:00 PM Peak	0	16	1	1
00:00 – 24:00 24 Hour	16	16	10	10

9.15 It is noted that a more recent planning application has been submitted for the same site on Kiln Lane, but as the traffic generated by the current consent is greater than that reported for the current planning application, the consented development has been included in this assessment.

Stallingborough Link Road (Ref: DM/0094/18/FUL)

9.16 A new Link Road with shared cycle / footway provision connecting Moody Lane / Woad Lane junction (to the south-east) to Hobson Way Roundabout (to the north-west) was approved in September 2018. The Link Road is due to open in 2022. To account for the opening of the Link Road in 2022 and the re-distribution of traffic, sensitivity testing has been undertaken at key junctions within the study area (see Section 10).

Habitat Mitigation Area for Special Protection Area Birds, Land adjacent Poplar Farm, South Marsh Road, Stallingborough (Ref: DM/0099/18/FUL)

9.17 Full planning permission was granted in August 2018 to provide a quality habitat area for Special Protection Area birds with associated works including two water storage lagoons, shallow scrapes and ponds, bunding, a bird hide, footpaths, car parking, cattle and timber fencing, culverts and bridges. A review of the planning application documents shows no Transport Statement has been submitted. However any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Hornsea Project One Offshore Wind Farm, Keelby Road, Stallingborough (Ref: DM/1146/17/FUL)

9.18 A full planning application was submitted in April 2018 as part of the Hornsea Project One Offshore Wind Farm for additional land for temporary dewatering areas including creation of bunding around the lagoon and the installation of a separate settlement tank and pump. A review of the planning application documents shows no Transport Statement has been submitted. However any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Selvic Shipping Ltd, Netherlands Way, Stallingborough (Ref: DM/0449/17/FUL)

9.19 Full planning permission was granted in August 2017 for the installation of 4 CHP boilers. A review of the planning application documents shows no Transport Statement has been submitted. Any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Block 3, Worldwide Way, Kiln Lane Trading Estate (Ref: DM/1050/16/FUL)

9.20 Full planning permission was granted in March 2017 for change of use of the site to allow business (Use Class B1) and / or general industrial (Use Class B2) and / or storage and distribution (Use Class B8) across the site and reconfiguration of car parking. A review of the Planning Statement submitted as part of the application reveals there will be no additional vehicle trips generated.

Construction of Access Road, Kiln Lane, Stallingborough (Ref: DM/0717/16/FUL)

9.21 Full planning permission was granted in October 2016 for the construction of an access road, electricity sub-station and foul water pumping compound, including installation of surface water drainage and service ducts. A review of the planning application documents shows no Transport Statement has been submitted. Any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Great Coates Renewable Energy Centre, Park Way, Grimsby (Ref: DM/0195/17/FUL)

9.22 Full planning permission was granted in August 2017 for the construction of a renewable energy centre. A review of the Transport Statement states the development would generate 60 two-way HGV movements per day and 40 two-way car trips. No information has been provided on the distribution of trips to the network however the

report concludes that the trip generation is unlikely to give rise to any operational concern on the road network. The only potential shared route for this development traffic would be the A180 however any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Temporary Construction Windfarm Compound, Grimsby Road, Laceby (Ref: DM/0153/17/FUL)

9.23 Full planning permission was granted in May 2017 for an additional area to be added to the temporary site construction compound to support the onshore cable installation and HDD for Hornsea Project One. A review of the planning application documents shows no Transport Statement has been submitted. However any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Construction of 9 Lagoons, South Killingholme (Ref: PA/2018/155)

9.24 Full planning permission was granted in March 2018 for the construction of 9 lagoons for the storage of surface water associated with the dewatering of cable trenches for the Hornsea Project One Offshore Windfarm Project. A review of the planning application documents shows no Transport Statement has been submitted. However any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

VPI Immingham Energy Park 'A', Rosper Road South Killingholme (Ref: PA/2018/918)

9.25 A full planning application was submitted in May 2018 for a gas fired power station and is awaiting a decision. A review of the Transport Statement prepared to support the application states that the development would create 6 operational roles generating an insignificant number of additional vehicular trips. However any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

VPI Immingham OCGT (Ref: PA/SCO/2017/155)

9.26 A scoping opinion has been submitted for an OCGT power station at South Killingholme, Immingham. The scoping opinion states that the facility will create up to 15 operational roles therefore generating an insignificant number of vehicle trips. Any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

River Humber Gas Pipeline Replacement Project (Ref: EN060004)

9.27 Development consent was granted in August 2016 for this project. However the project is considered to fall outside the area of influence for the Proposed Development. Any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

A180 Port of Immingham Improvement (Ref: TWA 8/1/13)

9.28 Development consent was granted in February 2015 for this scheme. However the project is considered to fall outside the area of influence for the Proposed Development. Any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Total Committed Development Flows

9.29 Total committed development flows assigned to the local network for the AM and PM Peak periods are shown in Annex 13.

10.0 TRAFFIC IMPACT ASSESSMENT

Link Flow Impact Assessment

10.1 The percentage impact of development traffic has been carried out on key links of the vehicle routing corridor to serve the Proposed Development. The links assessed include:

- South Marsh Road (East of Hobson Way);
- South Marsh Road (West of Hobson Way);
- Hobson Way (North of South Marsh Road);
- Kiln Lane (West of Hobson Way);
- A1173 (West of North Moss Lane);
- A1173 (North of A180); and
- A180 Westgate (East of Westgate Roundabout).

10.2 Table 10.1 below demonstrates the predicted changes to the future 2022 Baseline and 2028 Baseline (including committed development) two-way link flows following the addition of development traffic associated with the Proposed Development. The analysis is based on the increase in vehicles.

Table 10.1: Operational Link Impact Assessment

South Marsh Road (East of Hobson Way)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	82	128	210	64.1%
16:00 – 17:00 PM Peak	27	75	102	36.0%
Weekday 24 Hour	736	833	1,569	88.4%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	82	135	217	60.7%
16:00 – 17:00 PM Peak	27	79	106	34.2%
Weekday 24 Hour	736	885	1,621	83.2%

South Marsh Road (West of Hobson Way)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	7	161	168	4.3%
16:00 – 17:00 PM Peak	0	169	169	0.0%
Weekday 24 Hour	52	823	875	6.3%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	7	171	178	4.1%
16:00 – 17:00 PM Peak	0	178	178	0.0%
Weekday 24 Hour	52	874	926	5.9%

Hobson Way (North of South Marsh Road)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	75	214	289	35.0%
16:00 – 17:00 PM Peak	27	178	205	15.2%
Weekday 24 Hour	685	1,286	1,971	53.2%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	228	303	32.9%
16:00 – 17:00 PM Peak	27	188	215	14.4%
Weekday 24 Hour	685	1,366	2,051	50.1%

Kiln Lane (West of Hobson Way)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	75	413	488	18.2%
16:00 – 17:00 PM Peak	27	361	388	7.5%
Weekday 24 Hour	685	4,742	5,427	14.4%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	435	510	17.2%
16:00 – 17:00 PM Peak	27	380	407	7.1%
Weekday 24 Hour	685	4,978	5,663	13.8%

A1173 (West of North Moss Lane)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	75	923	998	8.1%
16:00 – 17:00 PM Peak	27	951	978	2.8%
Weekday 24 Hour	685	10,089	10,774	6.8%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	981	1,056	7.6%
16:00 – 17:00 PM Peak	27	1,010	1,037	2.7%
Weekday 24 Hour	685	10,776	11,461	6.4%

A1173 (North of A180)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	75	1,868	1,943	4.0%
16:00 – 17:00 PM Peak	27	1,941	1,968	1.4%
Weekday 24 Hour	685	20,562	21,247	3.3%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	2,046	2,121	3.7%
16:00 – 17:00 PM Peak	27	2,141	2,168	1.3%
Weekday 24 Hour	685	22,820	23,505	3.0%

A180 Westgate (East of Westgate Roundabout)

2022 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	27	2,993	3,020	0.9%
16:00 – 17:00 PM Peak	10	3,399	3,409	0.3%
Weekday 24 Hour	246	41,184	41,430	0.6%
2028 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	27	3,197	3,224	0.8%
16:00 – 17:00 PM Peak	10	3,629	3,639	0.3%
Weekday 24 Hour	246	44,032	44,278	0.6%

10.3 The generally accepted threshold of materiality is 10% on un-congested networks. The above tables show the greatest impact of operational traffic is on immediate routes in close proximity to the Site including South Marsh Road and Hobson Way. At these locations, base flows are relatively low thus the calculated percentage impact appears high.

Junction Capacity Assessment

10.4 This section describes the junction capacity assessments carried out at selected junctions within the Study Area in order to determine the level of impact during operation. The selected key junctions include:

- Hobson Way / South Marsh Road (East of Hobson Way) T-Junction;
- Hobson Way / South Marsh Road (West of Hobson Way) T-Junction;
- Laporte Road / Kiln Lane / Hobson Way Roundabout;
- Kiln Lane / North Moss Lane / Trondheim Way Roundabout;
- A1173 / Kiln Lane Roundabout;
- A180 Stallingborough Interchange; and
- A180 / Moody Lane / Pyewipe Road (Westgate Roundabout).

10.5 All junctions have been modelled using the TRL Software package Junctions 9. The results generated indicate the maximum Ratio of Flow to Capacity (RFC) value on each arm and the maximum queue generated. RFC values below 0.85 indicate the junction is operating without any issues. Values between 0.85 and 1.0 indicate the junction is operating above its design capacity but still operating within its theoretical capacity. RFC values in excess of 1.0 represent congested conditions and the junction begins to fail.

10.6 The modelling has been undertaken based on passenger car unit values (pcus) in order to best reflect any operational effects associated with HGV traffic.

10.7 Junction capacity assessments have been undertaken for the following scenarios:

- 2018 Base;
- 2022 Base + Committed Development;
- 2022 Base + Committed + Development;
- 2028 Base + Committed Development; and
- 2028 Base + Committed + Development

Hobson Way / South Marsh Road (East of Hobson Way) T-Junction

2018 Base Scenario

10.8 The modelling outputs suggest that the existing junction operates well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.08 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 10.2 below. The full outputs of these assessments are attached as Annex 14.

Table 10.2: 2018 Base Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.02	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.08	0.1
Hobson Way (Right Turn)	0.00	0.0

2022 Base + Committed Development Scenario

10.9 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.09 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 10.3 below. The full outputs of these assessments are attached as Annex 14.

Table 10.3: 2022 Base + Committed Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.03	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.09	0.1
Hobson Way (Right Turn)	0.00	0.0

2022 Base + Committed + Development Scenario

10.10 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.13 being forecast on South Marsh Road arm as summarised in Table 10.4 below. The full outputs of these assessments are attached as Annex 14.

Table 10.4: 2022 Base + Committed + Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0

2028 Base + Committed Development Scenario

10.11 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.09 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 10.5 below. The full outputs of these assessments are attached as Annex 14.

Table 10.5: 2028 Base + Committed Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.03	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.09	0.1
Hobson Way (Right Turn)	0.00	0.0

2028 Base + Committed + Development Scenario

10.12 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.13 being forecast on South Marsh Road arm as summarised in Table 10.6 below. The full outputs of these assessments are attached as Annex 14.

Table 10.6: 2028 Base + Committed + Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0

Sensitivity Testing Scenario with Link Road

10.13 It is noted that an application for a new Link Road to the south of the Proposed Development connecting Hobson Way with Moody Lane was approved in September 2018. The proposed Link Road is due to open in mid-2020.

10.14 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.7 below.

Table 10.7: 2026 Base + Committed + Link Road + Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.19	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.15	0.2
Hobson Way (Right Turn)	0.00	0.0

10.15 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.19 being forecast on South Marsh Road arm during the AM Peak. The full outputs of these assessments are attached as Annex 14.

Hobson Way / South Marsh Road (West of Hobson Way) T-Junction

2018 Base Scenario

10.16 The modelling outputs suggest that the existing junction operates well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.16 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.8 below. The full outputs of these assessments are attached in Annex 15.

Table 10.8: 2018 Base Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.11	0.1
South Marsh Road (Right Turn)	0.10	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.16	0.2

2022 Base + Committed Development Scenario

10.17 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.9 below. The full outputs of these assessments are attached in Annex 15.

Table 10.9: 2022 Base + Committed Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.11	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2022 Base + Committed + Development Scenario

10.18 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.10 below. The full outputs of these assessments are attached in Annex 15.

Table 10.10: 2022 Base + Committed + Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.12	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2028 Base + Committed Development Scenario

10.19 The modelling outputs suggest outputs that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.11 below. The full outputs of these assessments are attached in Annex 15.

Table 10.11: 2028 Base + Committed Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.13	0.1
South Marsh Road (Right Turn)	0.11	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2028 Base + Committed + Development Scenario

10.20 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.18 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.12 below. The full outputs of these assessments are attached in Annex 15.

Table 10.12: 2028 Base + Committed + Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.13	0.2
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.18	0.2

Sensitivity Testing Scenario with Link Road

10.21 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.13 below.

Table 10.13: 2026 Base + Committed + Link Road + Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.22	0.3
South Marsh Road (Right Turn)	0.14	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.01	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.24	0.3

10.22 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.24 being forecast on the right turn lane from Hobson Way during the PM Peak. The full outputs of these assessments are attached as Annex 15.

Laporte Road / Hobson Way / Kiln Lane Roundabout

2018 Base Scenario

10.23 The modelling outputs suggest that the existing junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.19 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.14 below. The full outputs of these assessments are attached as Annex 16.

Table 10.14: 2018 Base Modelling Outputs (Laporte Rd / Kiln Ln / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.04	0.0
Kiln Lane EB Approach	0.16	0.2
Laporte Road SB Approach	0.04	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.03	0.0
Kiln Lane EB Approach	0.05	0.1
Laporte Road SB Approach	0.19	0.3
Unnamed Access	0.00	0.0

2022 Base + Committed Development Scenario

10.24 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.15 below. The full outputs of these assessments are attached as Annex 16.

Table 10.15: 2022 Base + Committed Development Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.05	0.1
Kiln Lane EB Approach	0.18	0.2
Laporte Road SB Approach	0.07	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.03	0.0
Kiln Lane EB Approach	0.05	0.1
Laporte Road SB Approach	0.22	0.3
Unnamed Access	0.00	0.0

2022 Base + Committed + Development Scenario

10.25 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.16 below. The full outputs of these assessments are attached as Annex 16.

Table 10.16: 2022 Base + Committed + Development Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.07	0.1
Kiln Lane EB Approach	0.21	0.3
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.04	0.1
Kiln Lane EB Approach	0.07	0.1
Laporte Road SB Approach	0.22	0.3
Unnamed Access	0.00	0.0

2028 Base + Committed Development Scenario

10.26 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.23 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.17 below. The full outputs of these assessments are attached as Annex 16.

Table 10.17: 2028 Base + Committed Development Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.05	0.1
Kiln Lane EB Approach	0.19	0.3
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.03	0.0
Kiln Lane EB Approach	0.06	0.1
Laporte Road SB Approach	0.23	0.3
Unnamed Access	0.00	0.0

2028 Base + Committed + Development Scenario

10.27 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.23 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.18 below. The full outputs of these assessments are attached as Annex 16.

Table 10.18: 2028 Base + Committed + Development Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.08	0.1
Kiln Lane EB Approach	0.22	0.3
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.04	0.1
Kiln Lane EB Approach	0.07	0.1
Laporte Road SB Approach	0.23	0.3
Unnamed Access	0.00	0.0

Sensitivity Testing Scenario with Link Road

10.28 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.19 below.

Table 10.19: 2026 Base + Committed + Link Road + Development Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.35	0.5
Kiln Lane EB Approach	0.40	0.7
Laporte Road SB Approach	0.14	0.2
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.18	0.3
Kiln Lane EB Approach	0.10	0.2
Laporte Road SB Approach	0.43	0.8
Unnamed Access	0.01	0.0

10.29 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.43 being forecast on the Laporte Road arm during the PM Peak. The full outputs of these assessments are attached as Annex 16.

Kiln Lane / North Moss Lane / Trondheim Way Roundabout

2018 Base Scenario

10.30 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.43 being forecast on the Kiln Lane arm during the PM Peak. The full outputs of these assessments are attached as Annex 17.

Table 10.20: 2018 Base Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.12	0.2
North Moss Lane	0.09	0.1
A1173	0.37	0.6
Trondheim Way	0.03	0.0
PM Peak (16:00 – 17:00)		
Kiln Lane	0.43	0.8
North Moss Lane	0.07	0.1
A1173	0.23	0.4
Trondheim Way	0.05	0.1

2022 Base + Committed Development Scenario

10.31 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.47 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.0 pcu as summarised in Table 10.21 below. The full outputs of these assessments are attached as Annex 17.

Table 10.21: 2022 Base + Committed Development Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.13	0.2
North Moss Lane	0.10	0.1
A1173	0.42	0.8
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.47	1.0
North Moss Lane	0.08	0.1
A1173	0.26	0.5
Trondheim Way	0.05	0.1

2022 Base + Committed + Development Scenario

10.32 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.49 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.1 pcus as summarised in Table 10.22 below. The full outputs of these assessments are attached as Annex 17.

Table 10.22: 2022 Base + Committed + Development Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.18	0.4
North Moss Lane	0.10	0.1
A1173	0.47	1.0
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.49	1.1
North Moss Lane	0.08	0.1
A1173	0.27	0.5
Trondheim Way	0.05	0.1

2028 Base + Committed Development Scenario

10.33 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.50 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.1 pcus as summarised in Table 10.23 below. The full outputs of these assessments are attached as Annex 17.

Table 10.23: 2028 Base + Committed Development Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.14	0.3
North Moss Lane	0.11	0.1
A1173	0.45	0.9
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.50	1.1
North Moss Lane	0.09	0.1
A1173	0.27	0.5
Trondheim Way	0.06	0.1

2028 Base + Committed + Development Scenario

10.34 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.52 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.1 pcus as summarised in Table 10.24 below. The full outputs of these assessments are attached as Annex 17.

Table 10.24: 2028 Base + Committed + Development Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.19	0.4
North Moss Lane	0.11	0.1
A1173	0.49	1.1
Trondheim Way	0.03	0.0
PM Peak (16:00 – 17:00)		
Kiln Lane	0.52	1.2
North Moss Lane	0.09	0.1
A1173	0.29	0.5
Trondheim Way	0.06	0.1

Sensitivity Testing Scenario with Link Road

10.35 This junction was not tested as part of the Transport Assessment for the South Humber Bank Link Road prepared by Atkins in January 2018. However given that the new Link Road would result in a reduction of trips travelling along the A1173 and Kiln Lane, this would only further improve the capacity at the Kiln Lane / North Moss Lane / Trondheim Way Roundabout.

A1173 / Kiln Lane Roundabout

2018 Base Scenario

10.36 The modelling outputs suggest that the existing junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.67 being forecast on the A1173 southbound approach arm during the PM Peak as summarised in Table 10.25 below. The full outputs of these assessments are attached as Annex 18.

Table 10.25: 2018 Base Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.65	2.0
A1173 SB Approach	0.33	0.6
Kiln Lane WB Approach	0.13	0.2
PM Peak (16:00 – 17:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.24	0.4
A1173 SB Approach	0.67	2.2
Kiln Lane WB Approach	0.43	0.8

2022 Base + Committed Development Scenario

10.37 It is noted that as part of the Stallingborough Employment Site development, a number of improvements to the roundabout are proposed including:

- an improved southern arm onto the roundabout and formalise the site access arrangement;
- marginal widening of the A1173 northern arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry;
- marginal widening of the A1173 western arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry.

10.38 This junction has therefore been modelled with these improvements in place for the remaining scenarios.

10.39 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.84 being forecast on the A1173 eastbound approach arm during the AM Peak generating a maximum queue of 5.3 pcus as summarised in Table 10.26 below. The full outputs of these assessments are attached as Annex 18.

Table 10.26: 2022 Base + Committed Development Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.84	5.3
A1173 SB Approach	0.35	0.7
Kiln Lane WB Approach	0.15	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.31	0.6
A1173 SB Approach	0.68	2.3
Kiln Lane WB Approach	0.48	1.0

2022 Base + Committed + Development Scenario

10.40 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.88 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 7.4 pcus as summarised in Table 10.27 below. The full outputs of these assessments are attached as Annex 18.

Table 10.27: 2022 Base + Committed + Development Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.88	7.4
A1173 SB Approach	0.36	0.7
Kiln Lane WB Approach	0.19	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.32	0.6
A1173 SB Approach	0.69	2.4
Kiln Lane WB Approach	0.50	1.1

2028 Base + Committed Development Scenario

10.41 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.90 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 9.3 pcus as summarised in Table 10.28 below. The full outputs of these assessments are attached as Annex 18.

Table 10.28: 2028 Base + Committed Development Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.02	0.0
A1173 EB Approach	0.90	9.3
A1173 SB Approach	0.39	0.8
Kiln Lane WB Approach	0.17	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.10	0.1
A1173 EB Approach	0.35	0.7
A1173 SB Approach	0.75	3.2
Kiln Lane WB Approach	0.54	1.3

2028 Base + Committed + Development Scenario

10.42 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.95 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 14.9 pcus as summarised in Table 10.29 below. The full outputs of these assessments are attached as Annex 18.

Table 10.29: 2028 Base + Committed + Development Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.02	0.0
A1173 EB Approach	0.95	14.9
A1173 SB Approach	0.41	0.8
Kiln Lane WB Approach	0.20	0.4
PM Peak (16:00 – 17:00)		
Unnamed Access	0.11	0.1
A1173 EB Approach	0.36	0.7
A1173 SB Approach	0.75	3.3
Kiln Lane WB Approach	0.56	1.4

Sensitivity Testing Scenario with Link Road

10.43 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.30 below.

Table 10.30: 2026 Base + Committed + Link Road + Development Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.02	0.0
A1173 EB Approach	0.72	2.5
A1173 SB Approach	0.42	0.7
Kiln Lane WB Approach	0.12	0.1
PM Peak (16:00 – 17:00)		
Unnamed Access	0.06	0.1
A1173 EB Approach	0.28	0.4
A1173 SB Approach	0.66	1.9
Kiln Lane WB Approach	0.28	0.4

10.44 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.72 being forecast on the A1173 EB Approach arm during the AM Peak. This improvement in junction performance is due to the redistribution of traffic associated with the Link Road with a reduction in flows on the A1173. The full outputs of these assessments are attached as Annex 18.

A180 / A1173 Stallingborough Interchange

10.45 This junction has been modelled using the 'Lane Simulation' mode within Junctions 9 and allows lane specific movements for each approach to be considered resulting in Level of Service (LOS) based on delay and queue. The transportation LOS system uses the letters A through F, with the definitions below being typical:

- A = Free flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced or breakdown flow

2018 Base Scenario

10.46 The modelling outputs suggest the existing junction operates within free flow conditions (LOS = A) during the AM and PM peak periods as summarised in Table 10.31 below. The full outputs of these assessments are attached as Annex 19.

Table 10.31: 2018 Base Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	A	0.6
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	0.4
A180 WB Off-Slip	A	2.9
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.3
A1173 SB Approach	A	2.1
A180 WB Off-Slip	A	0.6

2022 Base + Committed Development Scenario

10.47 It is noted that as part of the Stallingborough Employment Site development, it is proposed to marginally widen the northern arm (A1173) into the roundabout to increase the flare length on the approach whilst maintaining a two lane entry. The junction has therefore been modelled with this improvement in place for the remaining scenarios.

10.48 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 6.2 pcus as summarised in Table 10.32 below. The full outputs of these assessments are attached as Annex 19.

Table 10.32: 2022 Base + Committed Development Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	A	0.8
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	0.4
A180 WB Off-Slip	C	6.2
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.4
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	2.2
A180 WB Off-Slip	A	0.8

2022 Base + Committed + Development Scenario

10.49 The modelling outputs suggest the junction will operate within free flow / reasonably free flow conditions (LOS = A, LOS = B) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 8.0 pcus as summarised in Table 10.33 below. The full outputs of these assessments are attached as Annex 19.

Table 10.33: 2022 Base + Committed + Development Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	0.8
A180 EB Off-Slip	A	0.6
A1173 SB Approach	A	0.6
A180 WB Off-Slip	C	8.0
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	2.4
A180 WB Off-Slip	A	0.7

2028 Base + Committed Development Scenario

10.50 The modelling outputs suggest the junction will operate within free flow / reasonably free flow conditions (LOS = A, LOS = B) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in approaching unstable flow conditions (LOS = D) during the AM Peak generating a queue of 12.0 pcus as summarised in Table 10.34 below. The full outputs of these assessments are attached as Annex 19.

Table 10.34: 2028 Base + Committed Development Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	1.1
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	0.5
A180 WB Off-Slip	D	12.0
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.4
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	2.8
A180 WB Off-Slip	A	0.7

2028 Base + Committed + Development Scenario

10.51 The modelling outputs suggest the junction will operate within free flow / reasonably free flow conditions (LOS = A, LOS = B) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in approaching unstable flow conditions (LOS = D) during the AM Peak generating a queue of 14.5 pcus as summarised in Table 10.35 below. The full outputs of these assessments are attached as Annex 19.

Table 10.35: 2028 Base + Committed + Development Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	1.1
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	0.5
A180 WB Off-Slip	D	14.5
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.5
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	3.1
A180 WB Off-Slip	A	0.8

Sensitivity Testing Scenario with Link Road

10.52 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.36 below.

Table 10.36: 2026 Base + Committed + Link Road + Development Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	C	3.2
A180 EB Off-Slip	A	0.2
A1173 SB Approach	A	0.3
A180 WB Off-Slip	A	1.7
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	1.4
A180 EB Off-Slip	A	0.2
A1173 SB Approach	A	1.0
A180 WB Off-Slip	A	0.6

10.53 The modelling outputs suggest the junction will operate well within free flow conditions on all arms during the AM and PM peak periods apart from the A1173 NB Approach which would operate within stable flow conditions during the AM Peak generating a queue of 3.2 pcus. This improvement in junction performance is due to the redistribution of traffic associated with the Link Road with a reduction in flows on the A1173 and the A180 to the south of the junction. The full outputs of these assessments are attached as Annex 19.

A180 / Moody Lane / Pyewipe Road (Westgate Roundabout)

2018 Base Scenario

10.54 The modelling outputs suggest the junction already operates above its theoretical capacity on the A180 Eastern arm during the AM Peak and the A180 Western arm and Moody Lane during the PM peak. By 2022 and 2028, the junction continues to operate above theoretical capacity largely due to the increase in background traffic flows. The full outputs of these assessments are attached as Annex 20.

Table 10.37: 2018 Base Modelling Outputs (A180 Westgate Roundabout)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A180 East	1.02	44.1
Pyewipe Rd	0.87	5.8
Birchin Way	0.85	4.0
A180 West	0.70	2.6
Moody Lane	0.32	0.6
PM Peak (16:00 – 17:00)		
A180 East	0.75	3.1
Pyewipe Rd	0.57	1.3
Birchin Way	0.63	1.7
A180 West	1.19	200.0
Moody Lane	1.07	19.3

10.55 The performance of this junction is already acknowledged in the Local Transport Plan which seeks to address congestion associated with peak hour traffic at this junction.

10.56 To understand the impact development traffic has on this junction, Tables 10.38 to 10.41 summarise the AM and PM forecast development flows as a proportion of the modelled flows at Westgate Roundabout for the future years 2022 (i.e. when the Proposed Development is forecast to be fully operational) and 2028. Figures 10.1 to 10.4 illustrate the information graphically.

Table 10.38:2022 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,330	143	1,970	679	154	4,276
Committed	29	2	68	20	2	121
Development	34	0	28	9	2	73
Total Flows	1,393	145	2,066	708	158	4,470
Development Flow as % of Total	*2.44%*	*0.0%*	*1.36%*	*1.27%*	*1.27%*	*1.63%*

Figure 10.1: 2022 AM Assessed Traffic Flows at Westgate Roundabout

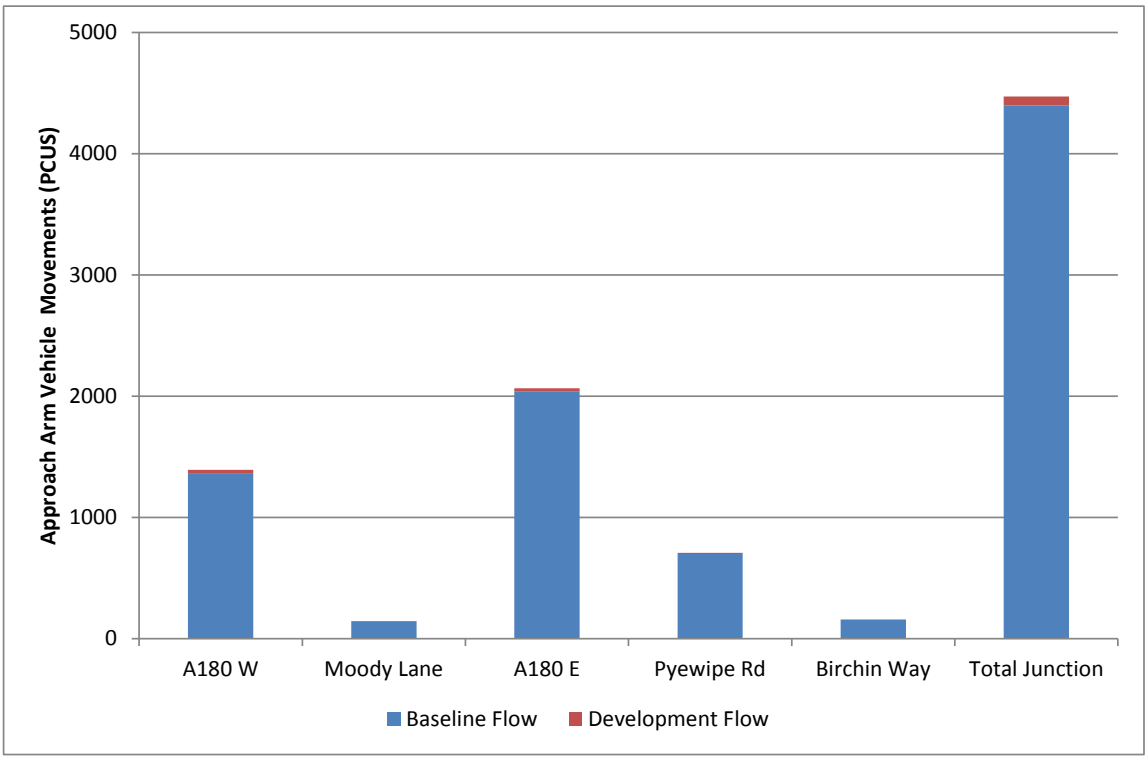


Table 10.39: 2022 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,244	315	1,377	660	309	4,905
Committed	76	0	20	7	2	105
Development	14	0	10	4	0	28
Total Flows	2,334	315	1,407	671	311	5,038
Development Flow as % of Total	*0.60%*	*0.0%*	*0.71%*	*0.60%*	*0.0%*	*0.56%*

Figure 10.2: 2022 PM Assessed Traffic Flows at Westgate Roundabout

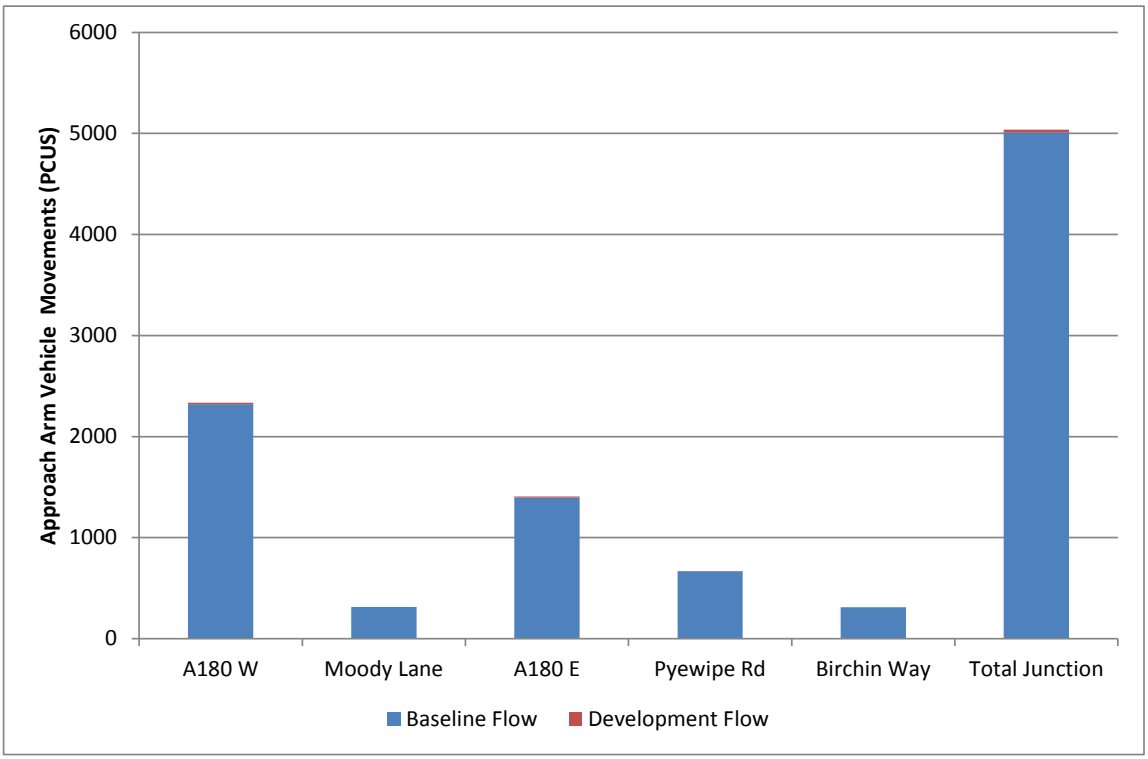


Table 10.40: 2028 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,388	214	2,089	720	164	4,575
Committed	42	2	89	26	3	162
Development	34	0	28	9	2	73
Total Flows	1,464	216	2,206	755	169	4,810
Development Flow as % of Total	*2.32%*	*0.0%*	*1.27%*	*1.19%*	*1.18%*	*1.52%*

Figure 10.3: 2028 AM Assessed Traffic Flows at Westgate Roundabout

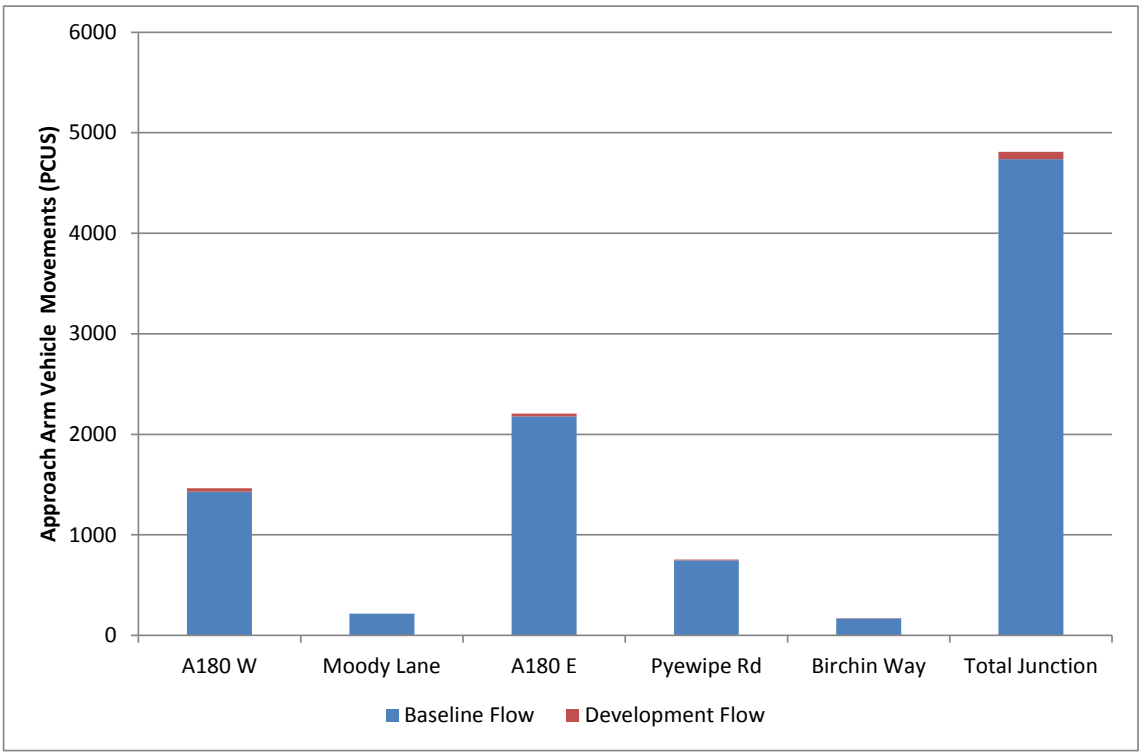
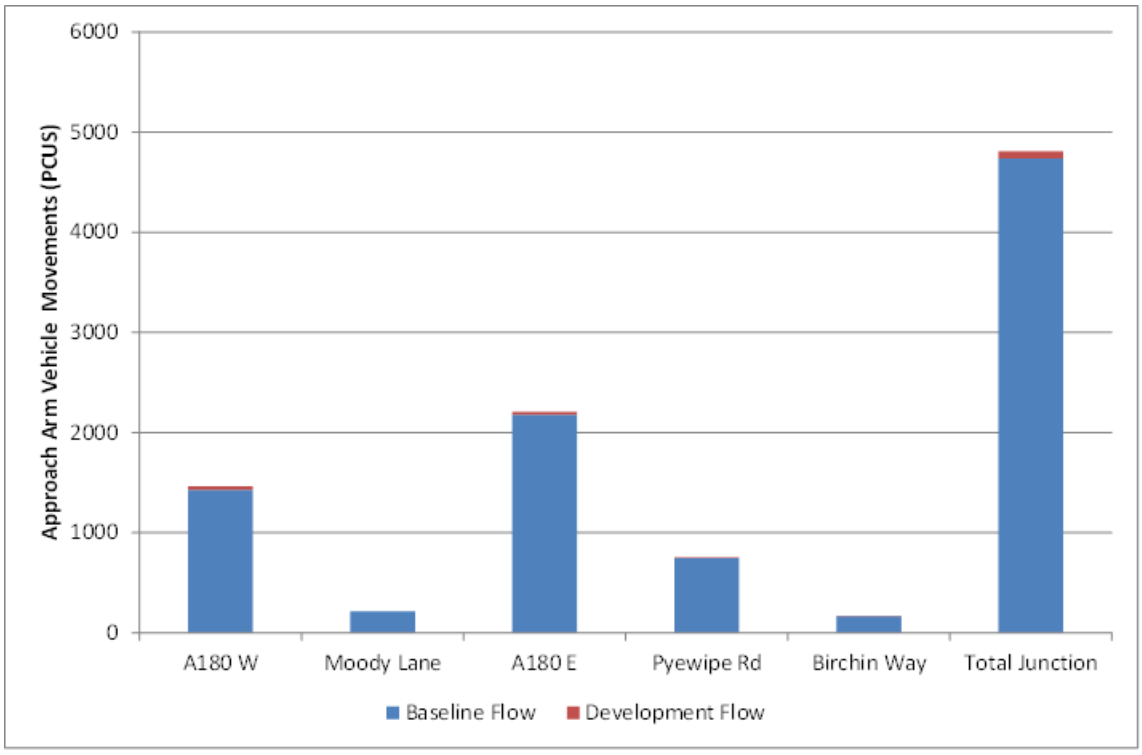


Table 10.41:2028 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,377	334	1,457	697	327	5,192
Committed	110	1	31	12	3	157
Development	14	0	10	4	0	28
Total Flows	2,501	335	1,498	713	330	5,377
Development Flow as % of Total	*0.56%*	*0.0%*	*0.67%*	*0.56%*	*0.0%*	*0.52%*

Figure 10.4: 2028 PM Assessed Traffic Flows at Westgate Roundabout



10.57 The analysis above shows the development traffic as a percentage of total traffic at this location is likely to be in the order of 1.5% - 1.6% in the AM Peak hour and 0.5% - 0.6% during the PM Peak hour in future years.

10.58 Considering the small percentage that development flows are adding to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junctions performance. Therefore no mitigation is proposed at this junction.

11.0 CONSTRUCTION TRAFFIC IMPACTS

Introduction

11.1 Subject to planning consent being granted, construction of the Proposed Development is due to start in 2019 with the construction programme lasting around 36 months and the peak construction period anticipated to be in 2020. If the Proposed Development is constructed in two phases, each phase would be less intensive with smaller peaks in construction staff and HGV movements. The TA assesses only the scenario whereby the full development is constructed in a single phase as a robust 'worst case' assessment.

11.2 It is proposed that all construction worker vehicles and HGVs will access the Site from South Marsh Road via two access points on South Marsh Road to the east of the South Humber Bank Power Station entrance.

Construction Generation

11.3 The estimated profile of workforce over the construction period for the Proposed Development is shown below in Table 11.1 and reveals the peak workforce is forecast to occur in the period around Q3 2020 when up to around 750 workers are expected on Site.

Table 11.1: Profile of Daily Workforce throughout Construction

YEAR OF CONSTRUCTION	DAILY WORKFORCE
Q3 2019	80
Q4 2019	170
Q1 2020	295
Q2 2020	590
Q3 2020	750
Q4 2020	750
Q1 2021	750
Q2 2021	750
Q3 2021	530
Q4 2021	360
Q1 2022	225
Q2 2022	140

11.4 In relation to traffic generation associated with construction workers, an average occupancy of two workers per vehicle has been applied. This occupancy rate has been accepted by transport stakeholders on other recent power station construction projects including Eggborough CCGT and Knottingley CCGT and is therefore considered robust. A Construction Worker Travel Plan aimed at identifying measures and establishing procedures to ensure the vehicle occupancy rates used in assessment are achieved will

be implemented by the appointed contractor. A Framework Construction Travel Plan has been prepared for this application and is included as Annex 25.

11.5 When this occupancy rate is applied to the workforce associated with construction of the Proposed Development at the peak of construction (Q3 2020), this equates to 375 daily one-way car movements per day.

11.6 The volume of construction HGVs on the network is predicted to be at its maximum of around 412 two-way daily vehicle movements (206 in and 206 out) at the start of the construction period (around Q3 2019), associated with the potential cut and fill of the top layer of ground within the Main Development Area for geotechnical purposes. During the remainder of the construction period HGV movements will vary between 18 and 116 daily two-way movements as shown in Table 11.2.

Table 11.2: Profile of Daily HGVs throughout Construction

YEAR OF CONSTRUCTION	DAILY HGVS (TWO-WAY)
Q3 2019	412
Q4 2019	80
Q1 2020	94
Q2 2020	108
Q3 2020	116
Q4 2020	70
Q1 2021	64
Q2 2021	52
Q3 2021	34
Q4 2021	18
Q1 2022	32
Q2 2022	26

11.7 Combining construction workforce vehicle movements with construction HGV movements over the entire construction programme shows the overall peak of construction to occur in around Q3 2020 when 116 two-way HGV movements per day are anticipated.

11.8 The total two-way construction vehicle traffic expected over the 36 month construction period is illustrated in Annex 21.

Daily Vehicle Profile during the Peak Month

11.9 Working hours on major construction sites tend to be long due to the pressures of timescales and available light. Therefore, the arrival and departure of workers' vehicles tend to be spread over the peak periods rather than all falling in the traditional network peak hours.

11.10 Based on a traffic count undertaken at the site entrance of a current energy from waste plant construction project at Ferrybridge, near Wakefield (known as Ferrybridge Multifuel 2) and operated by SSE, a profile of arrivals and departures over the working day has been produced. Table 11.3 below sets out the percentage of daily inbound and outbound trips on an hour-by-hour basis and calculates the totals for the peak of construction (around Q3 2020).

Table 11.3: Daily Vehicle Profile during Peak of Construction

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	ARRIVALS	DEPARTURES
06:00	42%	0%	158	0
07:00	37%	0%	138	0
08:00	12%	0%	45	0
09:00	9%	0%	34	0
16:00	0%	22%	0	82
17:00	0%	26%	0	98
18:00	0%	47%	0	176
19:00	0%	5%	0	19
Total	**100%**	**100%**	**375**	**375**

11.11 The daily profile of HGV movement over the day is based on experience from other power sector construction projects and assumes HGVs will be spread evenly over the day. Based on deliveries taking place between 07:00 and 19:00, this equates to 5 HGV arrivals and departures per hour.

Abnormal Loads

11.12 During the construction phase a number of abnormal load deliveries to the Site are expected.

11.13 The contractor will work with the relevant authorities and stakeholders to secure appropriate approvals for the transportation of abnormal loads on the strategic and local road network. Specific mitigation measures that would be investigated to deliver abnormal loads to the Site could include the temporary removal of street furniture (i.e. pedestrian islands, signage) and avoiding peak traffic periods for the delivery of abnormal loads.

Trip Distribution and Assignment

11.14 The distribution of construction workforce traffic to the network has been based on the population of towns and cities within a 45 minute drive time of the Site and the shortest/ quickest route to the Site. Table 11.4 shows the workforce distribution and the number of workers this equates to at the peak of construction (around Q3 2020).

Table 11.4: Daily Vehicle Profile during Peak of Construction

DISTRICT	POPULATION (2011 CENSUS)	PERCENTAGE DISTRIBUTION	NO. OF PERMANENT RESIDENT WORKERS (PEAK MONTH OF CONSTRUCTION)
Gainsborough	27,117	6%	45
Grimsby	88,243	18%	135
Hull	284,321	58%	435
Immingham	10,750	2%	15
Scunthorpe	79,977	16%	120

11.15 The assignment of the construction workforce to the network is shown in Annex 22.

11.16 All HGV construction traffic will access / depart the Site via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, it is assumed that 50% would arrive / depart to the east and 50% arrive / depart to the west. The routing of HGVs between the construction site and the A180 will be controlled through the implementation of a HGV routing plan included as a measure within the Construction Traffic Management Plan (CTMP) which will be prepared by the appointed contractor. A Framework Construction Traffic Management Plan which identifies the measures to control the routing and impact that HGVs will have on the local road network has been prepared for this application and is included as Annex 26.

11.17 The combined HGV and workforce traffic demand for the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 23.

Junction Capacity Assessment

11.18 In order to determine the level of impact during the peak of construction, junction capacity assessments have been carried out at key junctions within the Study Area (see Figure 3.2).

11.19 Based on the construction demand profile included in Annex 21, peak of construction is expected to occur in 2020 and would be characterised by staff travel associated with 750 workers based on Site and up to 116 daily HGV movements (58 in / 58 out).

11.20 Junction capacity assessments have been undertaken for the 2020 Baseline (including committed development) and 2020 Baseline + Committed + Peak of Construction scenarios at the following junctions:

- Hobson Way / South Marsh Road (East of Hobson Way) T-Junction;
- Hobson Way / South Marsh Road (West of Hobson Way) T-Junction;
- Laporte Road / Kiln Lane / Hobson Way Roundabout;
- Kiln Lane / North Moss Lane / Hobson Way Roundabout;
- A1173 / Kiln Lane Roundabout;
- A180 Stallingborough Interchange; and
- A180 / Moody Lane / Pyewipe Road (Westgate Roundabout).

11.21 The modelling has been undertaken based on passenger car unit values (pcus) in order to best reflect any construction effects associated with HGV traffic.

Hobson Way / South Marsh Road (East of Hobson Way) T-Junction

2020 Base + Committed Development Scenario

11.22 The modelling outputs suggest that the existing junction operates well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.09 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 11.5 below. The full outputs of these assessments are attached as Annex 14.

Table 11.5: 2020 Base + Committed Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.02	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.09	0.1
Hobson Way (Right Turn)	0.00	0.0

2020 Base + Committed + Peak of Construction Scenario

11.23 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 11.6 below. The full outputs of these assessments are attached as Annex 14.

Table 11.6: 2020 Base + Committed + Peak of Construction Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.04	0.1
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.22	0.3
Hobson Way (Right Turn)	0.00	0.0

Hobson Way / South Marsh Road (West of Hobson Way) T-Junction

2020 Base + Committed Development Scenario

11.24 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.16 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 11.7 below. The full outputs of these assessments are attached in Annex 15.

Table 11.7: 2020 Base + Committed Development Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.10	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.16	0.2

2020 Base + Committed + Peak of Construction Scenario

11.25 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 11.8 below. The full outputs of these assessments are attached in Annex 15.

Table 11.8: 2020 Base + Committed + Peak of Construction Modelling Outputs (South Marsh Road / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

Laporte Road / Hobson Way / Kiln Lane Roundabout

2020 Base + Committed Development Scenario

11.26 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.21 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 11.9 below. The full outputs of these assessments are attached as Annex 16.

Table 11.9: 2020 Base + Committed Development Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.04	0.0
Kiln Lane EB Approach	0.17	0.2
Laporte Road SB Approach	0.07	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.03	0.1
Kiln Lane EB Approach	0.05	0.1
Laporte Road SB Approach	0.21	0.3
Unnamed Access	0.00	0.0

2020 Base + Committed + Peak of Construction Scenario

11.27 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.24 being forecast on the Kiln Lane arm during the AM Peak as summarised in Table 11.10 below. The full outputs of these assessments are attached as Annex 16.

11.10: 2020 Base + Committed + Peak of Construction Modelling Outputs (Laporte Rd / Kiln Lane / Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.05	0.1
Kiln Lane EB Approach	0.24	0.3
Laporte Road SB Approach	0.07	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.07	0.1
Kiln Lane EB Approach	0.06	0.1
Laporte Road SB Approach	0.21	0.3
Unnamed Access	0.00	0.0

Kiln Lane / North Moss Lane / Trondheim Way Roundabout

2020 Base + Committed Development Scenario

11.28 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.46 being forecast on the Kiln Lane arm during the PM Peak as summarised in Table 11.11 below. The full outputs of these assessments are attached as Annex 17.

Table 11.11: 2020 Base + Committed Development Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.13	0.2
North Moss Lane	0.09	0.1
A1173	0.40	0.7
Trondheim Way	0.02	0.0
PM Peak (16:00 – 17:00)		
Kiln Lane	0.46	0.9
North Moss Lane	0.08	0.1
A1173	0.25	0.4
Trondheim Way	0.05	0.1

2020 Base + Committed + Peak of Construction Scenario

11.29 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.52 being forecast on the Kiln Lane arm during the PM Peak as summarised in Table 11.12 below. The full outputs of these assessments are attached as Annex 17.

Table 11.12: 2020 Base + Committed + Development Modelling Outputs (Kiln Lane / North Moss Lane / Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.14	0.2
North Moss Lane	0.09	0.1
A1173	0.49	1.0
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.52	1.2
North Moss Lane	0.08	0.1
A1173	0.25	0.5
Trondheim Way	0.05	0.1

A1173 / Kiln Lane Roundabout

2020 Base + Committed Development Scenario

11.30 It is noted that as part of the Stallingborough Employment Site development, a number of improvements to the roundabout are proposed including:

- an improved southern arm onto the roundabout and formalise the site access arrangement;
- marginal widening of the A1173 northern arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry;
- marginal widening of the A1173 western arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry.

11.31 This junction has therefore been modelled with these improvements in place for the remaining scenarios.

11.32 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.88 being forecast on the A1173 eastbound approach arm during the AM Peak generating a maximum queue of 7.1 pcus as summarised in Table 11.13 below. The full outputs of these assessments are attached as Annex 18.

Table 11.13: 2020 Base + Committed Development Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.88	7.1
A1173 SB Approach	0.33	0.6
Kiln Lane WB Approach	0.14	0.2
PM Peak (16:00 – 17:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.29	0.5
A1173 SB Approach	0.67	2.2
Kiln Lane WB Approach	0.47	1.0

2020 Base + Committed + Peak of Construction Scenario

11.33 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.95 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 15.3 pcus as summarised in Table 11.14 below. The full outputs of these assessments are attached as Annex 18.

Table 11.14: 2020 Base + Committed + Peak of Construction Modelling Outputs (A1173 / Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.95	15.3
A1173 SB Approach	0.36	0.7
Kiln Lane WB Approach	0.15	0.2
PM Peak (16:00 – 17:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.30	0.5
A1173 SB Approach	0.67	2.2
Kiln Lane WB Approach	0.52	1.2

A180 / A1173 Stallingborough Interchange

2020 Base + Committed Development Scenario

11.34 It is noted that as part of the Stallingborough Employment Site development, it is proposed to marginally widen the northern arm (A1173) into the roundabout to increase the flare length on the approach whilst maintaining a two lane entry. The junction has therefore been modelled with this improvement in place for the remaining scenarios.

11.35 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 6.5 pcus as summarised in Table 11.15 below. The full outputs of these assessments are attached as Annex 19.

Table 11.15: 2020 Base + Committed Development Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	0.8
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	0.5
A180 WB Off-Slip	C	6.5
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.4
A1173 SB Approach	A	1.8
A180 WB Off-Slip	A	0.7

2020 Base + Committed + Peak of Construction Scenario

11.36 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 7.9 pcus as summarised in Table 11.16 below. The full outputs of these assessments are attached as Annex 19.

Table 11.16: 2020 Base + Committed + Peak of Construction Modelling Outputs (A1173 / A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	0.8
A180 EB Off-Slip	A	0.8
A1173 SB Approach	A	0.4
A180 WB Off-Slip	C	7.9
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.3
A1173 SB Approach	A	2.2
A180 WB Off-Slip	A	0.5

A180 / Moody Lane / Pyewipe Road (Westgate Roundabout)

11.37 Analysis shown in Table 10.37 of this report shows that the junction currently operates above its theoretical capacity on the A180 Eastern arm during the AM Peak and the A180 Western arm and Moody Lane arm during the PM peak. By 2020, the junction would continue to operate above theoretical capacity largely due to the increase in background traffic flows. The full outputs of these assessments are attached as Annex 20.

11.38 To understand the impact development traffic has on this junction, Tables 11.17 and 11.18 summarise the AM and PM forecast development flows as a proportion of the modelled flows at Westgate Roundabout for the peak of construction year 2020. Figures 11.1 to 11.2 illustrate the information graphically.

Table 11.17: 2020 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,276	197	1,918	662	150	4,203
Committed	18	3	106	30	4	161
Development	5	0	16	5	1	27
Total Flows	1,299	200	2,040	697	155	4,391
Development Flow as % of Total	*0.38%*	*0.0%*	*0.78%*	*0.72%*	*0.65%*	*0.61%*

Figure 11.1: 2020 AM Assessed Traffic Flows at Westgate Roundabout

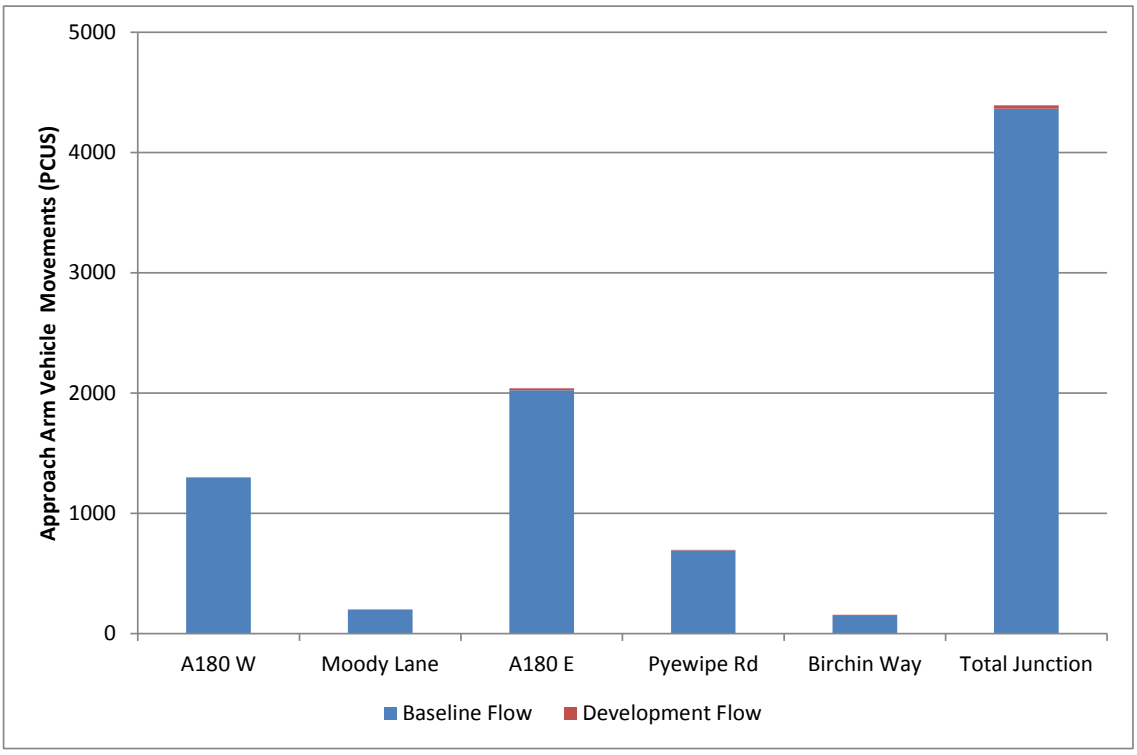
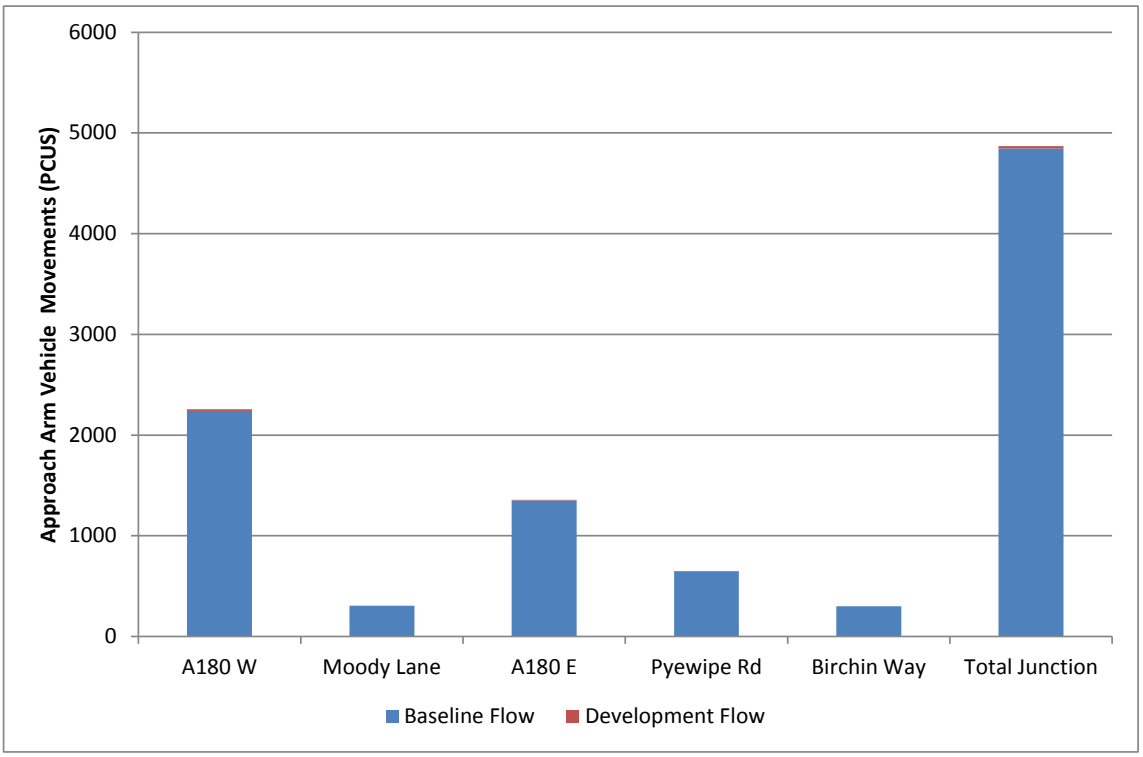


Table 11.18: 2020 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,188	307	1,341	643	300	4,779
Committed	53	0	11	5	0	69
Development	15	0	4	2	0	21
Total Flows	2,256	307	1,356	650	300	4,869
Development Flow as % of Total	*0.66%*	*0.0%*	*0.29%*	*0.31%*	*0.0%*	*0.43%*

Figure 11.2: 2020 PM Assessed Traffic Flows at Westgate Roundabout



11.39 The analysis above shows the construction traffic as a percentage of total traffic at this location is likely to be in the order of 0.6% in the AM Peak hour and 0.4% during the PM Peak hour at the peak of construction.

Considering the small percentage that construction flows are adding to the junction and the temporary nature of construction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore no mitigation is proposed at this junction.

12.0 SUMMARY AND CONCLUSION

12.1 This TA has been prepared by AECOM on behalf of EP SHB Limited to support a planning application for the proposed South Humber Bank Energy Centre on land at the existing South Humber Bank Power Station site, Stallingborough, North East Lincolnshire.

12.2 Baseline traffic flows for the immediate local highway network have been established through the collection of link and junction count data. Review of this data identified the network peak hours to be 07:00 to 08:00 and 16:00 to 17:00.

12.3 Review of personal injury accident data for the Study Area which includes South Marsh Road, Hobson Way, Kiln Lane and the A1173 shows a limited number of accidents over the five year study period. As such it is considered that there are no demonstrable highway safety concerns on the local road network.

12.4 Operational access to the Proposed Development will be taken via a new access at the eastern end of the adopted section of South Marsh Road. This access will cater for all vehicle movements to and from the Proposed Development.

12.5 It is proposed that 57 parking spaces would be provided on Site. This level of parking has been identified as being suitable to accommodate the proposed staffing levels at the Site and a level of visitor provision.

12.6 Once operational, the Proposed Development will generate a maximum of 368 one-way vehicle trips per day. This equates to a total two-way traffic flow of 736 vehicles. Of the total two-way flow, 624 would be HGV (312 inbound and 312 outbound) and 112 would be staff movements (56 inbound and 56 outbound).

12.7 It is proposed that operational HGV traffic to / from the Proposed Development will be required to use a designated HGV route to the Site with all HGVs routing to / from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road.

12.8 To assess the impact of the Proposed Development in a future year, growth rates for the North East Lincolnshire district have been obtained from TEMPRO software. The use of TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

12.9 Committed developments have been identified in the North East Lincolnshire area and incorporated into future year analysis.

12.10 Junction Capacity Assessments have been undertaken at seven key junctions within the study area. The modelling results show that six junctions would operate within capacity without the need to undertake any off Site highway improvement works. The assessment results for the A180 Westgate Roundabout show the junction to be already operating above its theoretical capacity in 2018. However considering the small percentage that development flows are adding to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore no mitigation is proposed at this junction.

12.11 To mitigate the impact of operational traffic, an Operational Travel Plan and Delivery Servicing Plan will be implemented.

12.12 Construction of the Proposed Development will represent a temporary increase in traffic over the 36 month construction programme. Peak HGV movements are due to occur at the start of construction (around Q3 2019) when around 412 two-way movements are anticipated. This is associated with the potential cut and fill of the top layer of ground within the Main Development Area for geotechnical purposes. However the overall peak

of construction which has been used as the basis for assessment is due to occur in around Q3 2020 and could result in the requirement for up to 750 staff to be based at the Site and 116 two-way HGV movements. Capacity testing of seven key junctions within the study area identifies that six of the junctions would operate within capacity without the need to undertake any off Site highway improvement works. The assessment results for the A180 Westgate Roundabout show the junction to already operating above its theoretical capacity. However given the small percentage that construction traffic flows are adding to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore no mitigation is proposed at this junction.

12.13 To mitigate the impact of construction traffic, a Construction Worker Travel Plan and Construction Traffic Management Plan will be implemented.

12.14 On this basis, it is not considered that the Proposed Development will have a material impact in terms of highway capacity or safety and that the Proposed Development represents acceptable development in highways and transport terms.

13.0 REFERENCES

- Chartered Institute of Highways and Transportation (2000) *Providing for Journeys on Foot*
- Chartered Institute of Highways and Transportation (1999) *Planning for Public Transport in Developments*
- Department for Transport (2008) *Local Transport Note 2/08 Cycle Infrastructure Design*
- Planning Practice Guidance (2014) *Travel Plans, Transport Assessment and Statements in decision-taking*

14.0 ANNEXES

ANNEX 1: SCOPING CORRESPONDENCE FROM KEY STAKEHOLDERS

Scott, Jonathan (Leeds)

From:	Geoghegan, Simon <Simon.Geoghegan@highwaysengland.co.uk>
Sent:	04 September 2018 13:56
To:	Scott, Jonathan (Leeds)
Subject:	South Humber Bank Energy Centre, South Marsh Road, Stallingborough: Scoping of Transport Assessment

Jonathan

Thank you for your email of August 13th 2018.

My consultant has reviewed your proposals for the scoping and comments as follows:

Highways England welcome the additional information provided, which will form the basis of the Transport Assessment to be submitted in support of the development proposals. In broad terms, the information provided is satisfactory. However, there are a couple of points which require addressing before the scope can be finalised:

- As per the CH2M Note (AE.18.37.01 TM001), the assessment years should be Circular 02/13 compliant,
  and a 2028 assessment year should be provided for completeness; and
- Committed development information should be provided through liaison with the LPA and not Highways England.

Please contact me again if I can provide further assistance.

Simon Geoghegan, Asset Manager, ADT(N)
Highways England | Lateral | 8 City Walk | Leeds | LS11 9AT
Tel: +44 (0) 300 4702420 | **Mobile**: personal
Web: http://www.highways.gov.uk
GTN: 0300 470 2420

Scott, Jonathan (Leeds)

From:	Scott, Jonathan (Leeds)
Sent:	13 August 2018 10:32
To:	'simon.geoghegan@highways.gsi.gov.uk'
Cc:	Firth, Peter
Subject:	South Humber Bank Energy Centre, South Marsh Road, Stallingborough: Scoping of Transport Assessment
Attachments:	Appendix 1.pdf

Dear Simon,

AECOM have been appointed by EP SHB Ltd regarding the proposed South Humber Bank Energy Centre which will be located to the east of the existing South Humber Bank Power Station located off South Marsh Road, Stallingborough. Thank you for your initial comments on the EIA Scoping Report (letter dated 27th July 2018, Ref: TA 227 134) in which you broadly accept the scope of the Transport Assessment.

I am now writing to set out a more detailed scope of the Transport Assessment and would be grateful if you could review the information provided and confirm that the proposed scope is acceptable.

Proposed Development

The Proposed Development comprises an Energy from Waste Facility for the generation of electricity by combustion of refuse derived fuel (RDF). The annual fuel throughput will vary depending on the net calorific value (NCV) of fuel which could range from 8 to 14MJ/kg, but the Transport Assessment will consider the traffic associated with the lowest NCV fuel, which would equate to approximately 701,500 tonnes per annum (tpa). The Proposed Development site will be located to the east of EP SHB's existing South Humber Bank Power Station on vacant land which is within the ownership of EP SHB Ltd. Subject to being granted planning consent, it is anticipated that construction would commence in 2019 and last approximately 3 years with the development opening in 2022.

All fuel will be imported via road. HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. The proposed South Humber Bank Link Road to the south of the Proposed Development Site which is due to open mid 2020 will not change the proposed HGV access routing.

It is proposed that the Proposed Development will operate 24 hours a day. Fuel would be delivered to the site between 6am and 6pm 7 days a week. Although the timings allow for deliveries every day of the week, it is likely that the majority of fuel deliveries will be Monday to Friday.

Daily Traffic Generation – Construction

The peak of construction is anticipated to occur in 2020 with 750 construction workers expected on-site. Assuming an occupancy rate of 2 per vehicle which has been accepted on other recent power station construction projects including Eggborough CCGT and Knottingley CCGT, this equates to 375 daily one-way car movements per day. HGVs at the peak of construction are anticipated to be 58 one-way movements per day. The profile of traffic during construction is attached as Appendix 1.

Construction hours are anticipated to be 07:00 – 19:00.

Construction Distribution and Assignment

In terms of construction worker trips, the distribution will be based on the population of towns and cities within a 45 minute drive time of the site and the shortest / quickest route to the Site.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split.

Daily Traffic Generation - Operation

The calculation of the number of Average Fuel Deliveries per Day is set out below and would likely be in the region of 188 HGVs per day based on deliveries occurring Monday to Friday.

- Fuel Tonnes per Annum: 701,500tpa
- Average HGV Payload: 16 tonnes
- Fuel Deliveries per Year: 701,500tpa / 16t = 43,844 Fuel Deliveries per Year
- Assuming all Deliveries occur Monday to Friday between 6am and 6pm = 260 Delivery Days per Year, but allowing for outages this is expected to be reduced to c.233 Delivery Days per Year
- Fuel Deliveries per Day: 43,844 / 233 Days = 188 Average Fuel Deliveries per Day (one-way)
- Fuel Deliveries per Hour: 188 Deliveries per Day / 12 Hours = 16 Average Fuel Deliveries per Hour (one-way).

To estimate the peak daily and hourly traffic flow, the following variables have been applied to ensure a robust assessment.

- Daily variation of fuel deliveries will occur due to sourcing and fuel suppliers. As an approximation, it is estimated that daily traffic flows might vary by +/- 20%. This imposes a 20% increase on the average daily flows.
- Hourly flows are difficult to control, depending on HGV drivers and loading times at other facilities. It is estimated that the hourly peak flow during a day is likely to be about twice that of the average hourly flow.

Based on the above variables, peak daily and hourly Fuel Deliveries are as follows:

- Daily Peak Fuel Deliveries: 226 HGVs (one-way);
- Hourly Peak Fuel Deliveries: 32 HGVs (one-way).

In addition, there would be a maximum of 5 HGV consumable deliveries per day (5 in + 5 out) or 1 in 1 out during the hourly peak. There would also be HGV movements associated with bottom ash and APC residues with a maximum of 61 HGVs per day (61 in + 61 out) or 9 in and 9 out during the hourly peak.

Total HGV movements at the site would therefore be 292 in and 292 out per day and a maximum of 42 in and 42 out in any one hour.

It is estimated that around 56 staff will be required on a shift basis to be spread over a 24 hour period. Site operation is likely to be undertaken via three 8hr shifts (00:00 – 08:00, 08:00 – 16:00, 16:00 – 00:00). Assuming a vehicle occupancy of 1 per vehicle this equates to 56 vehicle arrivals per day (56 in + 56 out).

Operational Assignment

Staff trips will be assigned to the network based on Journey to Work Census data.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split.

Identification of Peak Hours for Assessment

Peak Hour Junction Counts between the hours of (07:00 – 10:00 and 16:00 – 19:00) have been obtained for the following junctions:

- South Marsh Road / Hobson Way: June 2018 Count
- Laporte Road / Hobson Way / Kiln Lane: June 2018 Count
- A1173 / Kiln Lane: June 2018 Count
- A180 / A1173: July 2017 Count

Total flows into each junction will be calculated to determine the AM and PM Peak Hours for Assessment.

Junction Capacity Assessment

Junction modelling will be undertaken for the identified AM and PM Peak hours for the junction listed above.

The following scenarios will be tested:

- 2018 Base;
- 2020 Base + Committed Development;
- 2020 Base + Committed + Peak of Construction;
- 2022 Base + Committed Development;
- 2022 Base + Committed + Operation.

Committed Development

Highways England are asked to provide a list of committed developments to be included in the baseline flows.

South Humber Link Road

An application for a new South Humber Bank Link Road to the south of the Site connecting Hobson Way with Moody Lane was submitted in March 2018 and is pending determination. The proposed Link Road is due to open in mid-2020. According to the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 the Link Road will result in a redistribution of trips to / from the areas at either end of the Proposed Link Road as shown in Figures 1 and 2.

Figure 1

Figure 2

The proposed net change in traffic flows as a result of the proposed Link Road is set out in Table 1 below.

Link	AM Peak	PM Peak
Hobson Way	+ 740	+ 615
Kiln Lane (West of Hobson Way)	+ 287	+ 296
Kiln Lane (East of A1173)	- 464	- 469
A1173	- 519	- 357

Table 1 above shows that opening of the proposed Link Road would result in increased flows on Hobson Way and Kiln Lane (between Hobson Way and North Moss Lane) and a reduction in flows travelling on Kiln Lane (between North Moss Lane and the A1173), the A1173 and the A180 / A1173 junction.

The effect of the proposed Link Road on the Proposed Development would be additional road capacity at the A180 / A1173 interchange, the A1173 and Kiln Lane to the east of the A1173. Whilst the proposed Link Road would result in reduced capacity on Hobson Way and Kiln Lane (west of Hobson Way), junction modelling undertaken at the Kiln Lane / Laporte Road / Hobson Way roundabout as part of the South Humber Bank Link Road Transport Assessment for the future scenario 2026 with Committed Development and Proposed Link Road shows a maximum Ratio of Flow to Capacity (RFC) of 0.43

Given the above, it is not considered that any junction modelling with the South Humber Bank Link Road in place is considered necessary to support the planning application for the Proposed Development.

We trust that this approach is acceptable and would be grateful if you could confirm.

Kind Regards,
Jonathan

Jonathan Scott BSc (Hons), MSc, MCIHT
Senior Transport Planner, Development Planning
D +0113-204-5037
jonathan.scott@aecom.com

AECOM
2 City Walk
Leeds
LS11 9AR, England
T +0113-391-6800
aecom.com

Built to deliver a better world

LinkedIn Twitter Facebook Instagram

Scott, Jonathan (Leeds)

From:	Rachel Gennery (Engie) <Rachel.Gennery@Nelincs.gov.uk>
Sent:	19 September 2018 16:26
To:	Scott, Jonathan (Leeds)
Cc:	Lara Hattle (Engie); Cheryl Jarvis (Engie); Mark Gibbons (Engie); Firth, Peter
Subject:	South Humber Bank Energy Centre: Transport Assessment Scoping
Importance:	High

Hi Jonathan,

Apologies for the delay in my response. Please find my comments on the scoping report below. I have given overall comments but I have also addressed individual items contained within your email.

We would expect the Transport Assessment to be structured in the following way and include, but not be limited to:

1. Executive Summary
2. Introduction
3. Policy Context
    a. Revised NPPF
    b. Newly Adopted Local Plan
    c. Local Transport Plan
    d. Site Specific Policies and Allocations

4. Background/Existing Situation/Baseline Data –
    a. including access by public transport, walking and cycling
    b. review of local road network
    c. review of personal injury accident data (not using Crashmap unless it is the detailed description)

5. Description of Proposed Development – including
    a. details of staff shift patterns,
    b. parking provision (car, disabled, motorcycle, electric vehicle charging points, cycle parking etc. broken down for all users e.g. staff and visitors)

6. Details of Construction
    a. Timeframe (scoping note states 2019-2022 3 year timeframe)
    b. Expected vehicle types (including any abnormal loads and how these will be managed)
    c. Frequency of deliveries for each phase of construction
    d. Location of staff parking during construction
    e. Location of construction storage areas

7. Multi Modal Trip Generation
    a. Operational trip generation based on TRICS data and census data
    b. Distribution and assignment of trips (Car and HGV – staff and operational deliveries etc.)

8. Impacts
    a. Junction capacity analysis at the following junctions:
        i. South Marsh Road / Hobson Way – staggered crossroads
        ii. Laporte Road / Hobson Way / Kiln Lane - roundabout
        iii. A1173 / Kiln Lane – roundabout
        iv. Kiln Lane/North Moss Lane/Trondheim Way - roundabout
        v. A180 / A1173

vi. A180 / Moody Lane / Pyewipe Road (Westgate roundabout)

b. Peak hour allocation – this should be based on survey data (*it should be noted that due to port activities that peak hours have previously identified as 0600-0700 and 0500-0600)
c. Calculations of background traffic growth (TEMPRO adjusted growth factors)
d. Committed Development to include:
    i. South Humber Bank Link Road (SHBLR) – this should be included for operational traffic as it will be open by the time your site is operational. It should not be included when looking at construction traffic as we would expect that the construction of the link road will occur concurrently with the construction of the proposed Energy Centre.
    ii. SHIIP (including access roundabout)
    iii. A1173 / Kiln Lane Roundabout (improvements via ABLE UK planning app)
e. Consideration of Kings Road / Pelham Road AQMA roundabout
f. Consideration of diverted flows due to A18 closure

9. Proposed Mitigation and Residual Impacts

10. Summary and Conclusions

- A Travel Plan will be required to be submitted as part of the planning application. This can be in draft form with a condition to agree details. You should contact our Business Travel Planning Officer for further information on what should be included within the Travel Plan (Eve.Jenkins@nelincs.gov.uk). A Draft should be submitted as part of the planning application submission.

- Due to the number of construction workers required at the site we would also request a Construction Travel Plan to deal with how staff are going to travel to the site during the construction phases.

- A Construction Management Plan will be required to detail how traffic will be managed during the construction phase. A Draft should be submitted as part of the planning application submission.

- A Delivery and Servicing Plan will be required to demonstrate how deliveries and servicing will be managed. This should include (but not be limited to) details of banksmen requirements, scheduling to ensure that vehicles are not left waiting on the highway, time restrictions etc. A Draft should be submitted as part of the planning application submission.

I have provided additional commentary on your scoping notes in the email below in green.

If you have any queries please do let me know.

Kind regards,

Rachel

Rachel Gennery | Senior Highways & Transport Planner | ENGIE
☎ +44 (0)14 7232 4466 | +44 (0) 7733122071 |
✉ ENGIE, New Oxford House, George Street, Grimsby, North East Lincolnshire, DN31 1HB
www.engie.com/en / www.nelincs.gov.uk | rachel.gennery@nelincs.gov.uk

North East Lincolnshire Council and ENGIE, working in partnership to deliver a stronger economy and stronger communities.

From: Scott, Jonathan (Leeds)
Sent: 29 August 2018 13:27
To: Rachel Gennery (Engie)
Cc: Lara Hattle (Engie) ; Firth, Peter
Subject: RE: South Humber Bank Energy Centre: Transport Assessment Scoping

Rachel,

AECOM have been appointed by EP SHB Limited to prepare the Transport Assessment to support the planning application for the Proposed South Humber Bank Energy Centre near Stallingborough.

We have prepared a detailed transport scoping note in order to agree with you the parameters of the Transport Assessment. This was forwarded to you on 22nd August by your colleague Cheryl Jarvis (see below email chain).

I trust that the approach adopted for the Transport Assessment is acceptable and would be grateful if you could confirm. Alternatively if you prefer to discuss the scoping note over the phone, I would be happy to give you a call.

Kind Regards,
Jonathan

Jonathan Scott BSc (Hons), MSc, MCIHT
Senior Transport Planner, Development Planning
D +0113-204-5037
jonathan.scott@aecom.com

AECOM
2 City Walk
Leeds
LS11 9AR, England
T +0113-391-6800
aecom.com

Built to deliver a better world

LinkedIn Twitter Facebook Instagram

From: Cheryl Jarvis (Engie) <Cheryl.Jarvis@nelincs.gov.uk>
Sent: 22 August 2018 14:54
To: Rachel Gennery (Engie) <Rachel.Gennery@Nelincs.gov.uk>
Cc: Lara Hattle (Engie) <Lara.Hattle@nelincs.gov.uk>; Colin Turnbull <colin.turnbull@dwdllp.com>; 'ian.campbell@aecom.com' <ian.campbell@aecom.com>
Subject: FW: South Humber Bank Energy Centre: Transport Assessment Scoping

Hi Rachel,

See below and attached from Colin.

Colin, if I could be kept in the loop that would be great thanks.

Kind Regards

Cheryl Jarvis MSc| Principal Town Planner | **ENGIE**
☎ +44 (0)1472 324253 |
✉ ENGIE, Origin 2, Origin Way, Europarc, Grimsby, DN37 9TZ

www.engie.com/en cheryl.jarvis@nelincs.gov.uk

Please note – We are moving Offices shortly. From Wednesday 15th August to 20th August, please phone to make an appointment to see a member of our team. From Monday 20th August we will be in our new offices at New Oxford House, George Street, Grimsby, North East Lincolnshire, DN31 1HB.

North East Lincolnshire Council and ENGIE, working in partnership to deliver a stronger economy and stronger communities.

FUNDRAISING IN AID OF
North East Lincolnshire
Women's Aid

From: Colin Turnbull [mailto:colin.turnbull@dwdllp.com]
Sent: 22 August 2018 14:39
To: Cheryl Jarvis (Engie)
Cc: Campbell, Ian
Subject: FW: South Humber Bank Energy Centre: Transport Assessment Scoping

Cheryl

Please could I ask for the below to be sent to your highways colleagues? Alternatively we are content to speak with them directly. In either case please let us know whether you wish to be kept in the loop with the associated technical discussions.

Kind regards

Colin

From: Campbell, Ian
Sent: 22 August 2018 10:56
To: Colin Turnbull (colin.turnbull@dwdllp.com)
Cc: Geoff Bullock (geoff.bullock@dwdllp.com); Cobb, Kirsty; Kearns, Laura; Lowe, Richard; Scott, Jonathan (Leeds)
Subject: FW: South Humber Bank Energy Centre: Transport Assessment Scoping

Dr Ian Campbell, CGeol FGS
Principal Environmental Scientist, Waste Minerals and Resources
Tel +44 (0)1246 244531 Mobile +44 (0)7917 392168
ian.campbell@aecom.com
AECOM
www.aecom.com

Twitter I Facebook I LinkedIn I Google+

AECOM have been appointed by EP SHB Ltd regarding the proposed South Humber Bank Energy Centre which will be located to the east of the existing South Humber Bank Power Station located off South Marsh Road, Stallingborough. You may have seen the EIA Scoping Report which was submitted in July which provides an overview of the Proposed Development. NELC Planning ref DM/0575/18/SCO. As set out paragraph 6.49 in the Scoping Report, I am writing to set out the detail of the proposed scope of the Transport Assessment and would be grateful if this can be forwarded to NELC Highways and Highways England so that that they can review the information provided and confirm that the proposed scope is acceptable and ensure their specific requirements can be accommodated within the TA.

Proposed Development

The Proposed Development comprises an Energy from Waste Facility for the generation of electricity by combustion of refuse derived fuel (RDF). The annual fuel throughput will vary depending on the net calorific value (NCV) of fuel which could range from 9 to 14MJ/kg, but the Transport Assessment will consider the traffic associated with the lowest NCV fuel, which would equate to a maximum of around 300 HGV movements per day. The Proposed Development site will be located to the east of EP SHB's existing South Humber Bank Power Station on vacant land which is within the ownership of EP SHB Ltd. Subject to being granted planning consent, it is anticipated that construction would commence in 2019 and last approximately 3 years with the development opening in 2022.

All fuel will be imported via road. HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. The proposed South Humber Bank Link Road to the south of the Proposed Development Site which is due to open mid 2020 will not change the proposed HGV access routing. Accepted.

It is proposed that the Proposed Development will operate 24 hours a day. Fuel would be delivered to the site between 6am and 6pm 7 days a week. Although the timings allow for deliveries every day of the week, it is likely that the majority of fuel deliveries will be Monday to Friday. Accepted

Daily Traffic Generation – Construction

The peak of construction is anticipated to occur in 2020 with 750 construction workers expected on-site. Assuming an occupancy rate of 2 per vehicle which has been accepted on other recent power station construction projects

including Eggborough CCGT and Knottingley CCGT, this equates to 375 daily one-way car movements per day. HGVs at the peak of construction are anticipated to be 58 one-way movements per day. The profile of traffic during construction is attached as Appendix 1.

Construction hours are anticipated to be 07:00 – 19:00. See comments above on provision of a Construction Management Plan, Construction Travel Plan and additional details within the TA on how construction will be routed and managed.

Construction Distribution and Assignment

In terms of construction worker trips, the distribution will be based on the population of towns and cities within a 45 minute drive time of the site and the shortest / quickest route to the Site.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split. – Is a 50/50 split realistic? What evidence has this been based on or is this assumed? Can you not provide a more detailed split with a justification based on expected locations of where materials will be coming from?

See additional comments above on provision of a Construction Management Plan, Construction Travel Plan and additional details within the TA on how construction will be routed and managed.

Daily Traffic Generation - Operation

To estimate the peak daily and hourly traffic flow, the following variables have been applied to ensure a robust assessment.

- Daily variation of fuel deliveries will occur due to sourcing and fuel suppliers. As an approximation, it is estimated that daily traffic flows might vary by +/- 20%. This imposes a 20% increase on the average daily flows.
- Hourly flows are difficult to control, depending on HGV drivers and loading times at other facilities. It is estimated that the hourly peak flow during a day is likely to be about twice that of the average hourly flow.

Based on the above variables, peak daily and hourly Fuel Deliveries are as follows:

- Daily Peak Fuel Deliveries: 242 HGVs (one-way);
- Hourly Peak Fuel Deliveries: 34 HGVs (one-way).

In addition, there would be a maximum of 5 HGV consumable deliveries per day (5 in + 5 out) or 1 in 1 out during the hourly peak. There would also be HGV movements associated with bottom ash and APC residues with a maximum of 65 HGVs per day (65 in + 65 out) or 9 in and 9 out during the hourly peak.

Total HGV movements at the site would therefore be 312 in and 312 out per day and a maximum of 44 deliveries in any one hour.

It is estimated that around 56 staff will be required on a shift basis to be spread over a 24 hour period. Site operation is likely to be undertaken via three 8hr shifts (00:00 – 08:00, 08:00 – 16:00, 16:00 – 00:00). Assuming a vehicle occupancy of 1 per vehicle this equates to 56 vehicle arrivals per day (56 in + 56 out).

It is understood that this site will generate a significant number of HGV movements. The routeing of these movements and the suitability of the proposed routes will need to be carefully justified. Swept path analysis showing HGVs manoeuvring the route to the site should be provided.

Operational Assignment

Staff trips will be assigned to the network based on Journey to Work Census data. Accepted.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split. Is a 50/50 split realistic? What evidence has this been based on or is this assumed? Can you not provide a more detailed split with a justification based on expected locations of where materials will be coming from?

Identification of Peak Hours for Assessment

Peak Hour Junction Counts between the hours of (07:00 – 10:00 and 16:00 – 19:00) have been obtained for the following junctions:

- South Marsh Road / Hobson Way: June 2018 Count
- Laporte Road / Hobson Way / Kiln Lane: June 2018 Count
- A1173 / Kiln Lane: June 2018 Count
- A180 / A1173: July 2017 Count

Total flows into each junction will be calculated to determine the AM and PM Peak Hours for Assessment.

See list of junctions required for junction capacity analysis.

Junction Capacity Assessment

Junction modelling will be undertaken for the identified AM and PM Peak hours for the junction listed above.

The following scenarios will be tested:

- 2018 Base;
- 2020 Base + Committed Development;
- 2020 Base + Committed + Peak of Construction;
- 2022 Base + Committed Development;
- 2022 Base + Committed + Operation.

Agreed.

Committed Development

North East Lincolnshire Council are asked to provide a list of committed developments to be included in the baseline flows.#

See comments above.

South Humber Link Road

An application for a new South Humber Bank Link Road to the south of the Site connecting Hobson Way with Moody Lane was submitted in March 2018 and is pending determination. The proposed Link Road is due to open in mid-2020. According to the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 the Link Road will result in a redistribution of trips to / from the areas at either end of the Proposed Link Road as shown in Figures 1 and 2.

Figure 1

Figure 2

The proposed net change in traffic flows as a result of the proposed Link Road is set out in Table 1 below.

Link	AM Peak	PM Peak
Hobson Way	+ 740	+ 615
Kiln Lane (West of Hobson Way)	+ 287	+ 296
Kiln Lane (East of A1173)	- 464	- 469
A1173	- 519	- 357

Table 1 above shows that opening of the proposed Link Road would result in increased flows on Hobson Way and Kiln Lane (between Hobson Way and North Moss Lane) and a reduction in flows travelling on Kiln Lane (between North Moss Lane and the A1173), the A1173 and the A180 / A1173 junction.

The effect of the proposed Link Road on the Proposed Development would be additional road capacity at the A180 / A1173 interchange, the A1173 and Kiln Lane to the east of the A1173. Whilst the proposed Link Road would result in reduced capacity on Hobson Way and Kiln Lane (west of Hobson Way), junction modelling undertaken at the Kiln Lane / Laporte Road / Hobson Way roundabout as part of the South Humber Bank Link Road Transport Assessment for the future scenario 2026 with Committed Development and Proposed Link Road shows a maximum Ratio of Flow to Capacity (RFC) of 0.43

Given the above, it is not considered that any junction modelling with the South Humber Bank Link Road in place is considered necessary to support the planning application for the Proposed Development.

For accuracy and completeness this should be included for operational traffic as it will be open by the time your site is operational. It should not be included when looking at construction traffic as we would expect that the construction of the link road will occur concurrently with the construction of the proposed Energy Centre.

We trust that this approach is acceptable and would be grateful if you could confirm.

Kind Regards,
Jonathan

Jonathan Scott BSc (Hons), MSc, MCIHT
Senior Transport Planner, Development Planning
D +0113-204-5037
jonathan.scott@aecom.com

AECOM
2 City Walk
Leeds
LS11 9AR, England
T +0113-391-6800
aecom.com

Built to deliver a better world

LinkedIn Twitter Facebook Instagram

This email has been scanned on behalf of Dalton Warner Davis by MessageLabs.

Reduce your environmental footprint, please do not print this email unless you really need to.

North Lincolnshire Council, North East Lincolnshire Council and Northern Lincolnshire Business Connect

This e-mail and any files transmitted with it contains information from North East Lincolnshire Council, North Lincolnshire Council or Northern Lincolnshire Business Connect which may be privileged or confidential. The information is intended solely for the use of the individual(s) or entity named above. If you are not the intended recipient be aware that any processing of this email and its attachments is strictly prohibited. If you have received this e-mail in error, please send it back to us, immediately and permanently delete it. Do not use, copy or disclose the information contained in this message or in any attachment.

The North East Lincolnshire Council, North Lincolnshire Council or Northern Lincolnshire Business Connect email system, including emails and their content, may be monitored for security reasons and to ensure compliance with council policy. Emails and attachments may be recorded for the effective operation of the organisation and for other lawful business purposes.

We cannot guarantee that this email or its attachments are virus free or has not been intercepted and amended. We therefore recommend you carry out your own anti-virus checks before opening any email or attachments. North East Lincolnshire Council, North Lincolnshire Council or Northern Lincolnshire Business Connect will not accept any liability for any errors or omissions in the contents of this email or its attachments, or any damage or loss caused by computer viruses coming from this email or its attachments.

Scanned by Anti Virus Software

This email has been scanned on behalf of Dalton Warner Davis by MessageLabs.

This email has been scanned on behalf of Dalton Warner Davis by MessageLabs.

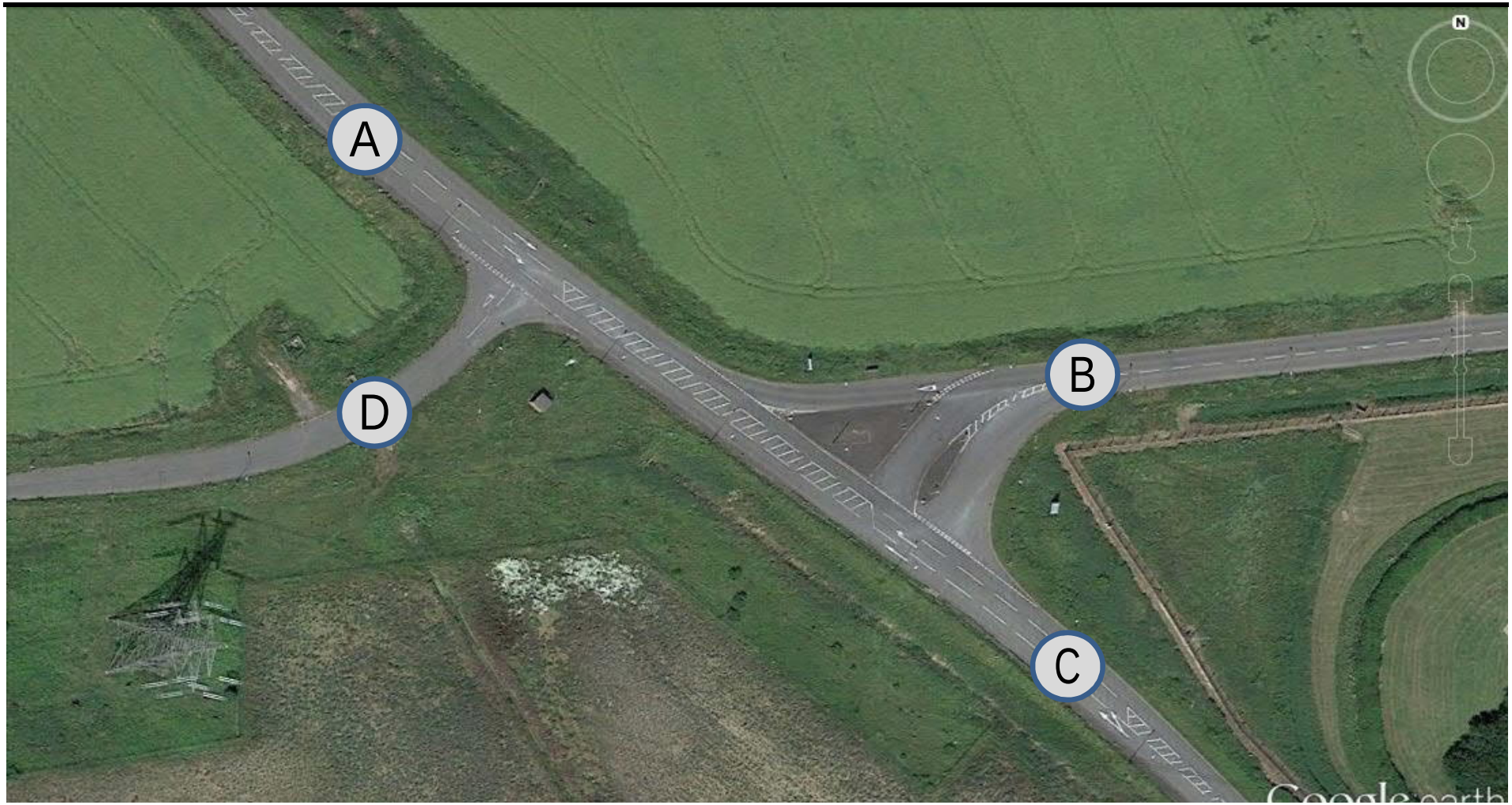
Rachel Gennery | Senior Highways & Transport Planner | ENGIE
☎ +44 (0)14 7232 4466 | +44 (0) 7733122071 |
✉ ENGIE, New Oxford House, George Street, Grimsby, North East Lincolnshire, DN31 1HB
www.engie.com/en / www.nelincs.gov.uk | rachel.gennery@nelincs.gov.uk

North East Lincolnshire Council and ENGIE, working in partnership to deliver a stronger economy and stronger communities.

Reduce your environmental footprint, please do not print this email unless you really need to.

ANNEX 2: RAW TRAFFIC COUNT DATA

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road



Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

traffic survey partners

1 1 1.5 2.3 2 2 0.4 0.2

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	15								15	15
07:15									0	0	7		1	1					9	10.8
07:30									0	0	10	4	1						15	15.5
07:45									0	0	14	4							18	18
H/Total	0	0	0	0	0	0	0	0	0	0	46	8	2	1	0	0	0	0	57	59.3
08:00									0	0	4	1	1						6	6.5
08:15									0	0	6	4		1					11	12.3
08:30									0	0	6								6	6
08:45									0	0	4	1	2	1					8	10.3
H/Total	0	0	0	0	0	0	0	0	0	0	20	6	3	2	0	0	0	0	31	35.1
09:00									0	0	3	1		1					5	6.3
09:15									0	0	4								4	4
09:30									0	0	2	1	6	1					10	14.3
09:45									0	0			3	3					6	11.4
H/Total	0	0	0	0	0	0	0	0	0	0	9	2	9	5	0	0	0	0	25	36
Total	0	0	0	0	0	0	0	0	0	0	75	16	14	8	0	0	0	0	113	130.4

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0		1		1				1	3	3.5
16:15									0	0		1		2					3	5.6
16:30									0	0				2					2	4.6
16:45									0	0								1	1	0.2
H/Total	0	0	0	0	0	0	0	0	0	0	0	2	0	5	0	0	0	2	9	13.9
17:00									0	0									0	0
17:15									0	0		1							1	1
17:30									0	0	2							1	3	2.2
17:45									0	0	1							1	2	1.2
H/Total	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	2	6	4.4
18:00									0	0	7								7	7
18:15									0	0	2			1					3	4.3
18:30									0	0	3							1	4	3.2
18:45									0	0	3	1							4	4
H/Total	0	0	0	0	0	0	0	0	0	0	15	1	0	1	0	0	0	1	18	18.5
Total	0	0	0	0	0	0	0	0	0	0	18	4	0	6	0	0	0	5	33	36.8

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	9								9	9	3								3	3
07:15	7								7	7		1							1	1
07:30	10	1							11	11									0	0
07:45	7								7	7	1								1	1
H/Total	33	1	0	0	0	0	0	0	34	34	4	1	0	0	0	0	0	0	5	5
08:00									0	0									0	0
08:15	3	1							4	4	2								2	2
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	3	1	0	0	0	0	0	0	4	4	2	0	0	0	0	0	0	0	2	2
09:00									0	0									0	0
09:15									0	0		1						1	2	1.2
09:30	2								2	2	1								1	1
09:45									0	0	1	1							2	2
H/Total	2	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	1	5	4.2
Total	38	2	0	0	0	0	0	0	40	40	8	3	0	0	0	0	0	1	12	11.2

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	20	4						1	25	24.2
16:15									0	0	28	4							32	32
16:30	1								1	1	36	3						1	40	39.2
16:45	4								4	4	18							1	19	18.2
H/Total	5	0	0	0	0	0	0	0	5	5	102	11	0	0	0	0	0	3	116	113.6
17:00	1			1					2	3.3	32	1						1	34	33.2
17:15	2		1	1					4	5.8	22	1						2	25	23.4
17:30	5	1							6	6	9								9	9
17:45	3			2					5	7.6	10							1	11	10.2
H/Total	11	1	1	4	0	0	0	0	17	22.7	73	2	0	0	0	0	0	4	79	75.8
18:00	2	2							4	4	6						1		7	6.4
18:15	2								2	2	1								1	1
18:30				1					1	2.3	4						1		5	4.4
18:45				1					1	2.3	2								2	2
H/Total	4	2	0	2	0	0	0	0	8	10.6	13	0	0	0	0	0	2	0	15	13.8
Total	20	3	1	6	0	0	0	0	30	38.3	188	13	0	0	0	0	2	7	210	203.2

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1								1	1									0	0
07:15	3							1	4	3.2									0	0
07:30								6	6	1.2									0	0
07:45	2	1	1	2				1	7	9.3									0	0
H/Total	6	1	1	2	0	0	0	8	18	14.7	0	0	0	0	0	0	0	0	0	0
08:00				1				1	2	2.5									0	0
08:15	1		1						2	2.5									0	0
08:30	1	1		1				1	4	4.5									0	0
08:45		1	1	1					3	4.8									0	0
H/Total	2	2	2	3	0	0	0	2	11	14.3	0	0	0	0	0	0	0	0	0	0
09:00	1	1	1	1				1	5	6									0	0
09:15	1								1	1									0	0
09:30	3	1	1						5	5.5									0	0
09:45	1	3	2						6	7									0	0
H/Total	6	5	4	1	0	0	0	1	17	19.5	0	0	0	0	0	0	0	0	0	0
Total	14	8	7	6	0	0	0	11	46	48.5	0	0	0	0	0	0	0	0	0	0

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	5	1							6	6									0	0
16:15	3	1		2					6	8.6									0	0
16:30	7	2							9	9									0	0
16:45	4								4	4									0	0
H/Total	19	4	0	2	0	0	0	0	25	27.6	0	0	0	0	0	0	0	0	0	0
17:00	7								7	7									0	0
17:15	1								1	1									0	0
17:30		2		2				1	5	6.8									0	0
17:45	16	2		1					19	20.3									0	0
H/Total	24	4	0	3	0	0	0	1	32	35.1	0	0	0	0	0	0	0	0	0	0
18:00	6	4						2	12	10.4									0	0
18:15	2								2	2									0	0
18:30	3								3	3									0	0
18:45	4		1						5	5.5									0	0
H/Total	15	4	1	0	0	0	0	2	22	20.9	0	0	0	0	0	0	0	0	0	0
Total	58	12	1	5	0	0	0	3	79	83.6	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

traffic survey partners

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	1								1	1
07:15									0	0	1								1	1
07:30									0	0								1	1	0.2
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	3	2.2
08:00									0	0									0	0
08:15	1								1	1	2								2	2
08:30									0	0									0	0
08:45									0	0				1					1	2.3
H/Total	1	0	0	0	0	0	0	0	1	1	2	0	0	1	0	0	0	0	3	4.3
09:00									0	0									0	0
09:15	1								1	1									0	0
09:30			1						1	1.5		1							1	1
09:45									0	0	1	1							2	2
H/Total	1	0	1	0	0	0	0	0	2	2.5	1	2	0	0	0	0	0	0	3	3
Total	2	0	1	0	0	0	0	0	3	3.5	5	2	0	1	0	0	0	1	9	9.5

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	7	1						1	9	8.2
16:15									0	0	5	3						3	11	8.6
16:30			1						1	1.5	10	1							11	11
16:45									0	0	3						1		4	3.4
H/Total	0	0	1	0	0	0	0	0	1	1.5	25	5	0	0	0	0	1	4	35	31.2
17:00									0	0	4								4	4
17:15									0	0	5								5	5
17:30									0	0	3	1							4	4
17:45									0	0	12	1				1		1	15	15.2
H/Total	0	0	0	0	0	0	0	0	0	0	24	2	0	0	0	1	0	1	28	28.2
18:00		1							1	1	3	2							5	5
18:15									0	0	2								2	2
18:30									0	0	1								1	1
18:45									0	0	2								2	2
H/Total	0	1	0	0	0	0	0	0	1	1	8	2	0	0	0	0	0	0	10	10
Total	0	1	1	0	0	0	0	0	2	2.5	57	9	0	0	0	1	1	5	73	69.4

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1		2						3	4									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45	1								1	1									0	0
H/Total	2	0	2	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0
08:00									0	0	1								1	1
08:15									0	0	1								1	1
08:30									0	0		1							1	1
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	3
09:00									0	0									0	0
09:15									0	0	1								1	1
09:30									0	0									0	0
09:45	1		1						2	2.5	1								1	1
H/Total	1	0	1	0	0	0	0	0	2	2.5	2	0	0	0	0	0	0	0	2	2
Total	3	0	3	0	0	0	0	0	6	7.5	4	1	0	0	0	0	0	0	5	5

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15	1		1						2	2.5									0	0
16:30	2								2	2									0	0
16:45	6								6	6									0	0
H/Total	9	0	1	0	0	0	0	0	10	10.5	0	0	0	0	0	0	0	0	0	0
17:00	1								1	1									0	0
17:15	3		1						4	4.5									0	0
17:30	1								1	1									0	0
17:45	39			2			1		42	44									0	0
H/Total	44	0	1	2	0	0	1	0	48	50.5	0	0	0	0	0	0	0	0	0	0
18:00	15	1							16	16									0	0
18:15	1								1	1									0	0
18:30	3								3	3									0	0
18:45	1								1	1									0	0
H/Total	20	1	0	0	0	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0
Total	73	1	2	2	0	0	1	0	79	82	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00									0	0									0	0
08:15									0	0	2								2	2
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	1								1	1
16:15									0	0									0	0
16:30									0	0		1							1	1
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	2
17:00									0	0									0	0
17:15									0	0			1						1	1.5
17:30									0	0	1	3							4	4
17:45									0	0	9							1	10	9.2
H/Total	0	0	0	0	0	0	0	0	0	0	10	3	1	0	0	0	0	1	15	14.7
18:00									0	0	10								10	10
18:15									0	0	3								3	3
18:30									0	0	1								1	1
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	14	14
Total	0	0	0	0	0	0	0	0	0	0	25	4	1	0	0	0	0	1	31	30.7

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

traffic survey partners

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	11	2						2	15	13.4	4	2							6	6
07:15	12	1						3	16	13.6	8			1		1		1	11	12.5
07:30	27								27	27	6	1						1	8	7.2
07:45	22	3						2	27	25.4	11	6					1		18	17.4
H/Total	72	6	0	0	0	0	0	7	85	79.4	29	9	0	1	0	1	1	2	43	43.1
08:00	17							1	18	17.2	5	1						1	7	6.2
08:15	19							1	20	19.2	6	1		1					8	9.3
08:30	21	2							23	23	6								6	6
08:45	9							1	10	9.2	3								3	3
H/Total	66	2	0	0	0	0	0	3	71	68.6	20	2	0	1	0	0	0	1	24	24.5
09:00	7								7	7	1								1	1
09:15	3								3	3	2								2	2
09:30	2	1							3	3	2	1							3	3
09:45									0	0	1								1	1
H/Total	12	1	0	0	0	0	0	0	13	13	6	1	0	0	0	0	0	0	7	7
Total	150	9	0	0	0	0	0	10	169	161	55	12	0	2	0	1	1	3	74	74.6

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00		1							1	1									0	0
16:15	1	1							2	2									0	0
16:30							1		1	0.4			1						1	1.5
16:45									0	0									0	0
H/Total	1	2	0	0	0	0	1	0	4	3.4	0	0	1	0	0	0	0	0	1	1.5
17:00	1								1	1								1	1	0.2
17:15	2								2	2								1	1	0.2
17:30	1								1	1	1								1	1
17:45	1								1	1	2						1	2	5	2.8
H/Total	5	0	0	0	0	0	0	0	5	5	3	0	0	0	0	0	1	4	8	4.2
18:00							1	1	2	0.6	4								4	4
18:15	3								3	3									0	0
18:30	2								2	2									0	0
18:45	1								1	1									0	0
H/Total	6	0	0	0	0	0	1	1	8	6.6	4	0	0	0	0	0	0	0	4	4
Total	12	2	0	0	0	0	2	1	17	15	7	0	1	0	0	0	1	4	13	9.7

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	4							1	5	4.2									0	0
07:15	5	1							6	6									0	0
07:30	3								3	3									0	0
07:45	3								3	3									0	0
H/Total	15	1	0	0	0	0	0	1	17	16.2	0	0	0	0	0	0	0	0	0	0
08:00		1							1	1									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
09:00	2								2	2									0	0
09:15	1								1	1									0	0
09:30									0	0									0	0
09:45	1								1	1									0	0
H/Total	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
Total	19	2	0	0	0	0	0	1	22	21.2	0	0	0	0	0	0	0	0	0	0

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15		1							1	1									0	0
16:30	1								1	1									0	0
16:45	1								1	1									0	0
H/Total	2	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
17:00	2								2	2									0	0
17:15	1								1	1									0	0
17:30									0	0									0	0
17:45	1								1	1									0	0
H/Total	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
18:00	2								2	2									0	0
18:15	1								1	1									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	3	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
Total	9	1	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	27	0	0	0	0	0	0	0	27	27	13	2	2	0	0	0	0	2	19	18.4
07:15	14	1	1	1	0	0	0	0	17	18.8	15	1	0	0	0	0	0	4	20	16.8
07:30	20	5	1	0	0	0	0	0	26	26.5	27	0	0	0	0	0	0	6	33	28.2
07:45	22	4	0	0	0	0	0	0	26	26	25	4	1	2	0	0	0	3	35	35.7
H/Total	83	10	2	1	0	0	0	0	96	98.3	80	7	3	2	0	0	0	15	107	99.1
08:00	4	1	1	0	0	0	0	0	6	6.5	17	0	0	1	0	0	0	2	20	19.7
08:15	11	5	0	1	0	0	0	0	17	18.3	20	0	1	0	0	0	0	1	22	21.7
08:30	6	0	0	0	0	0	0	0	6	6	22	3	0	1	0	0	0	1	27	27.5
08:45	4	1	2	1	0	0	0	0	8	10.3	9	1	1	1	0	0	0	1	13	14
H/Total	25	7	3	2	0	0	0	0	37	41.1	68	4	2	3	0	0	0	5	82	82.9
09:00	3	1	0	1	0	0	0	0	5	6.3	8	1	1	1	0	0	0	1	12	13
09:15	4	1	0	0	0	0	0	1	6	5.2	4	0	0	0	0	0	0	0	4	4
09:30	5	1	6	1	0	0	0	0	13	17.3	5	2	1	0	0	0	0	0	8	8.5
09:45	1	1	3	3	0	0	0	0	8	13.4	2	3	3	0	0	0	0	0	8	9.5
H/Total	13	4	9	5	0	0	0	1	32	42.2	19	6	5	1	0	0	0	1	32	35
Total	121	21	14	8	0	0	0	1	165	181.6	167	17	10	6	0	0	0	21	221	217

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	20	5	0	1	0	0	0	2	28	27.7	5	2	0	0	0	0	0	0	7	7
16:15	28	5	0	2	0	0	0	0	35	37.6	5	2	1	2	0	0	0	0	10	13.1
16:30	37	3	0	2	0	0	0	1	43	44.8	9	2	0	0	0	0	1	0	12	11.4
16:45	22	0	0	0	0	0	0	2	24	22.4	10	0	0	0	0	0	0	0	10	10
H/Total	107	13	0	5	0	0	0	5	130	132.5	29	6	1	2	0	0	1	0	39	41.5
17:00	33	1	0	1	0	0	0	1	36	36.5	9	0	0	0	0	0	0	0	9	9
17:15	24	2	1	1	0	0	0	2	30	30.2	6	0	1	0	0	0	0	0	7	7.5
17:30	16	1	0	0	0	0	0	1	18	17.2	2	2	0	2	0	0	0	1	7	8.8
17:45	14	0	0	2	0	0	0	2	18	19	56	2	0	3	0	0	1	0	62	65.3
H/Total	87	4	1	4	0	0	0	6	102	102.9	73	4	1	5	0	0	1	1	85	90.6
18:00	15	2	0	0	0	0	1	0	18	17.4	21	5	0	0	0	0	1	3	30	27
18:15	5	0	0	1	0	0	0	0	6	7.3	6	0	0	0	0	0	0	0	6	6
18:30	7	0	0	1	0	0	1	1	10	9.9	8	0	0	0	0	0	0	0	8	8
18:45	5	1	0	1	0	0	0	0	7	8.3	6	0	1	0	0	0	0	0	7	7.5
H/Total	32	3	0	3	0	0	2	1	41	42.9	41	5	1	0	0	0	1	3	51	48.5
Total	226	20	1	12	0	0	2	12	273	278.3	143	15	3	7	0	0	3	4	175	180.6

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	2	0	0	0	0	0	0	0	2	2	19	2	0	0	0	0	0	0	21	21
07:15	4	0	0	0	0	0	0	1	5	4.2	15	0	1	2	0	1	0	1	20	23.3
07:30	0	0	0	0	0	0	0	7	7	1.4	16	5	1	0	0	0	0	1	23	22.7
07:45	2	1	1	2	0	0	0	1	7	9.3	25	10	0	0	0	0	1	0	36	35.4
H/Total	8	1	1	2	0	0	0	9	21	16.9	75	17	2	2	0	1	1	2	100	102.4
08:00	0	0	0	1	0	0	0	1	2	2.5	10	2	1	0	0	0	0	1	14	13.7
08:15	4	0	1	0	0	0	0	0	5	5.5	13	5	0	2	0	0	0	0	20	22.6
08:30	1	1	0	1	0	0	0	1	4	4.5	12	1	0	0	0	0	0	0	13	13
08:45	0	1	1	2	0	0	0	0	4	7.1	7	1	2	1	0	0	0	0	11	13.3
H/Total	5	2	2	4	0	0	0	2	15	19.6	42	9	3	3	0	0	0	1	58	62.6
09:00	1	1	1	1	0	0	0	1	5	6	4	1	0	1	0	0	0	0	6	7.3
09:15	2	0	0	0	0	0	0	0	2	2	7	0	0	0	0	0	0	0	7	7
09:30	3	2	2	0	0	0	0	0	7	8	4	2	6	1	0	0	0	0	13	17.3
09:45	2	4	2	0	0	0	0	0	8	9	2	0	3	3	0	0	0	0	8	13.4
H/Total	8	7	5	1	0	0	0	1	22	25	17	3	9	5	0	0	0	0	34	45
Total	21	10	8	7	0	0	0	12	58	61.5	134	29	14	10	0	1	1	3	192	210

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	12	2	0	0	0	0	0	1	15	14.2	0	1	0	1	0	0	0	1	3	3.5
16:15	8	4	0	2	0	0	0	3	17	17.2	0	1	0	2	0	0	0	0	3	5.6
16:30	17	3	1	0	0	0	0	0	21	21.5	0	0	1	2	0	0	0	0	3	6.1
16:45	7	0	0	0	0	0	1	0	8	7.4	0	0	0	0	0	0	0	1	1	0.2
H/Total	44	9	1	2	0	0	1	4	61	60.3	0	2	1	5	0	0	0	2	10	15.4
17:00	11	0	0	0	0	0	0	0	11	11	0	0	0	0	0	0	0	1	1	0.2
17:15	6	0	0	0	0	0	0	0	6	6	0	1	0	0	0	0	0	1	2	1.2
17:30	3	3	0	2	0	0	0	1	9	10.8	3	0	0	0	0	0	0	1	4	3.2
17:45	28	3	0	1	0	1	0	1	34	35.5	3	0	0	0	0	0	1	3	7	4
H/Total	48	6	0	3	0	1	0	2	60	63.3	6	1	0	0	0	0	1	6	14	8.6
18:00	9	7	0	0	0	0	0	2	18	16.4	11	0	0	0	0	0	0	0	11	11
18:15	4	0	0	0	0	0	0	0	4	4	2	0	0	1	0	0	0	0	3	4.3
18:30	4	0	0	0	0	0	0	0	4	4	3	0	0	0	0	0	0	1	4	3.2
18:45	6	0	1	0	0	0	0	0	7	7.5	3	1	0	0	0	0	0	0	4	4
H/Total	23	7	1	0	0	0	0	2	33	31.9	19	1	0	1	0	0	0	1	22	22.5
Total	115	22	2	5	0	1	1	8	154	155.5	25	4	1	6	0	0	1	9	46	46.5

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

traffic survey partners

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1	0	2	0	0	0	0	0	3	4	13	0	0	0	0	0	0	1	14	13.2
07:15	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	0	13	13
07:30	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	0	14	14
07:45	1	0	0	0	0	0	0	0	1	1	10	0	0	0	0	0	0	0	10	10
H/Total	2	0	2	0	0	0	0	0	4	5	48	2	0	0	0	0	0	1	51	50.2
08:00	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1
08:15	3	0	0	0	0	0	0	0	3	3	4	1	0	0	0	0	0	0	5	5
08:30	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	4	1	0	0	0	0	0	0	5	5	4	2	0	0	0	0	0	0	6	6
09:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
09:15	1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2	2
09:30	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3	3.5
09:45	2	0	1	0	0	0	0	0	3	3.5	1	0	0	0	0	0	0	0	1	1
H/Total	3	0	1	0	0	0	0	0	4	4.5	7	0	1	0	0	0	0	0	8	8.5
Total	9	1	3	0	0	0	0	0	13	14.5	59	4	1	0	0	0	0	1	65	64.7

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
16:15	1	0	1	0	0	0	0	0	2	2.5	0	1	0	0	0	0	0	0	1	1
16:30	2	1	0	0	0	0	0	0	3	3	2	0	1	0	0	0	0	0	3	3.5
16:45	6	0	0	0	0	0	0	0	6	6	5	0	0	0	0	0	0	0	5	5
H/Total	10	1	1	0	0	0	0	0	12	12.5	7	1	1	0	0	0	0	0	9	9.5
17:00	1	0	0	0	0	0	0	0	1	1	3	0	0	1	0	0	0	0	4	5.3
17:15	3	0	2	0	0	0	0	0	5	6	3	0	1	1	0	0	0	0	5	6.8
17:30	2	3	0	0	0	0	0	0	5	5	5	1	0	0	0	0	0	0	6	6
17:45	48	0	0	2	0	0	1	1	52	53.2	4	0	0	2	0	0	0	0	6	8.6
H/Total	54	3	2	2	0	0	1	1	63	65.2	15	1	1	4	0	0	0	0	21	26.7
18:00	25	1	0	0	0	0	0	0	26	26	4	3	0	0	0	0	0	0	7	7
18:15	4	0	0	0	0	0	0	0	4	4	3	0	0	0	0	0	0	0	3	3
18:30	4	0	0	0	0	0	0	0	4	4	0	0	0	1	0	0	0	0	1	2.3
18:45	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	2.3
H/Total	34	1	0	0	0	0	0	0	35	35	7	3	0	2	0	0	0	0	12	14.6
Total	98	5	3	2	0	0	1	1	110	112.7	29	5	2	6	0	0	0	0	42	50.8

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

traffic survey partners

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	19	4	0	0	0	0	0	3	26	23.6	4	0	0	0	0	0	0	0	4	4
07:15	25	2	0	1	0	1	0	4	33	32.1	1	1	0	0	0	0	0	0	2	2
07:30	36	1	0	0	0	0	0	1	38	37.2	0	0	0	0	0	0	0	1	1	0.2
07:45	36	9	0	0	0	0	1	2	48	45.8	1	0	0	0	0	0	0	0	1	1
H/Total	116	16	0	1	0	1	1	10	145	138.7	6	1	0	0	0	0	0	1	8	7.2
08:00	22	2	0	0	0	0	0	2	26	24.4	0	0	0	0	0	0	0	0	0	0
08:15	25	1	0	1	0	0	0	1	28	28.5	6	0	0	0	0	0	0	0	6	6
08:30	27	2	0	0	0	0	0	0	29	29	0	0	0	0	0	0	0	0	0	0
08:45	12	0	0	0	0	0	0	1	13	12.2	0	0	0	1	0	0	0	0	1	2.3
H/Total	86	5	0	1	0	0	0	4	96	94.1	6	0	0	1	0	0	0	0	7	8.3
09:00	10	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
09:15	6	0	0	0	0	0	0	0	6	6	0	1	0	0	0	0	0	1	2	1.2
09:30	4	2	0	0	0	0	0	0	6	6	1	1	0	0	0	0	0	0	2	2
09:45	2	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	4	4
H/Total	22	2	0	0	0	0	0	0	24	24	3	4	0	0	0	0	0	1	8	7.2
Total	224	23	0	2	0	1	1	14	265	256.8	15	5	0	1	0	0	0	2	23	22.7

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	0	1	0	0	0	0	0	0	1	1	28	5	0	0	0	0	0	2	35	33.4
16:15	1	2	0	0	0	0	0	0	3	3	33	7	0	0	0	0	0	3	43	40.6
16:30	1	0	1	0	0	0	1	0	3	2.9	46	5	0	0	0	0	0	1	52	51.2
16:45	1	0	0	0	0	0	0	0	1	1	21	0	0	0	0	0	1	1	23	21.6
H/Total	3	3	1	0	0	0	1	0	8	7.9	128	17	0	0	0	0	1	7	153	146.8
17:00	3	0	0	0	0	0	0	1	4	3.2	36	1	0	0	0	0	0	1	38	37.2
17:15	3	0	0	0	0	0	0	1	4	3.2	27	1	1	0	0	0	0	2	31	29.9
17:30	2	0	0	0	0	0	0	0	2	2	13	4	0	0	0	0	0	0	17	17
17:45	4	0	0	0	0	0	1	2	7	4.8	31	1	0	0	0	1	0	3	36	34.6
H/Total	12	0	0	0	0	0	1	4	17	13.2	107	7	1	0	0	1	0	6	122	118.7
18:00	6	0	0	0	0	0	1	1	8	6.6	19	2	0	0	0	0	1	0	22	21.4
18:15	4	0	0	0	0	0	0	0	4	4	6	0	0	0	0	0	0	0	6	6
18:30	2	0	0	0	0	0	0	0	2	2	6	0	0	0	0	0	1	0	7	6.4
18:45	1	0	0	0	0	0	0	0	1	1	4	0	0	0	0	0	0	0	4	4
H/Total	13	0	0	0	0	0	1	1	15	13.6	35	2	0	0	0	0	2	0	39	37.8
Total	28	3	1	0	0	0	3	5	40	34.7	270	26	1	0	0	1	3	13	314	303.3

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

traffic survey partners

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	49	4	2	0	0	0	0	3	58	56.6
07:15	43	3	1	2	0	1	0	5	55	55.1
07:30	56	6	1	0	0	0	0	8	71	65.1
07:45	61	14	1	2	0	0	1	3	82	82.1
H/Total	209	27	5	4	0	1	1	19	266	258.9
08:00	27	3	1	1	0	0	0	3	35	34.4
08:15	43	6	1	2	0	0	0	1	53	55.3
08:30	34	4	0	1	0	0	0	1	40	40.5
08:45	16	2	3	3	0	0	0	1	25	29.6
H/Total	120	15	5	7	0	0	0	6	153	159.8
09:00	14	2	1	2	0	0	0	1	20	22.3
09:15	13	1	0	0	0	0	0	1	15	14.2
09:30	12	5	8	1	0	0	0	0	26	31.3
09:45	7	5	6	3	0	0	0	0	21	27.9
H/Total	46	13	15	6	0	0	0	2	82	95.7
Total	375	55	25	17	0	1	1	27	501	514.4

Peak Hours		Totals
07:00	08:00	266
07:15	08:15	243
07:30	08:30	241
07:45	08:45	210

08:00	09:00	153
08:15	09:15	138
08:30	09:30	100
08:45	09:45	86

09:00	10:00	82

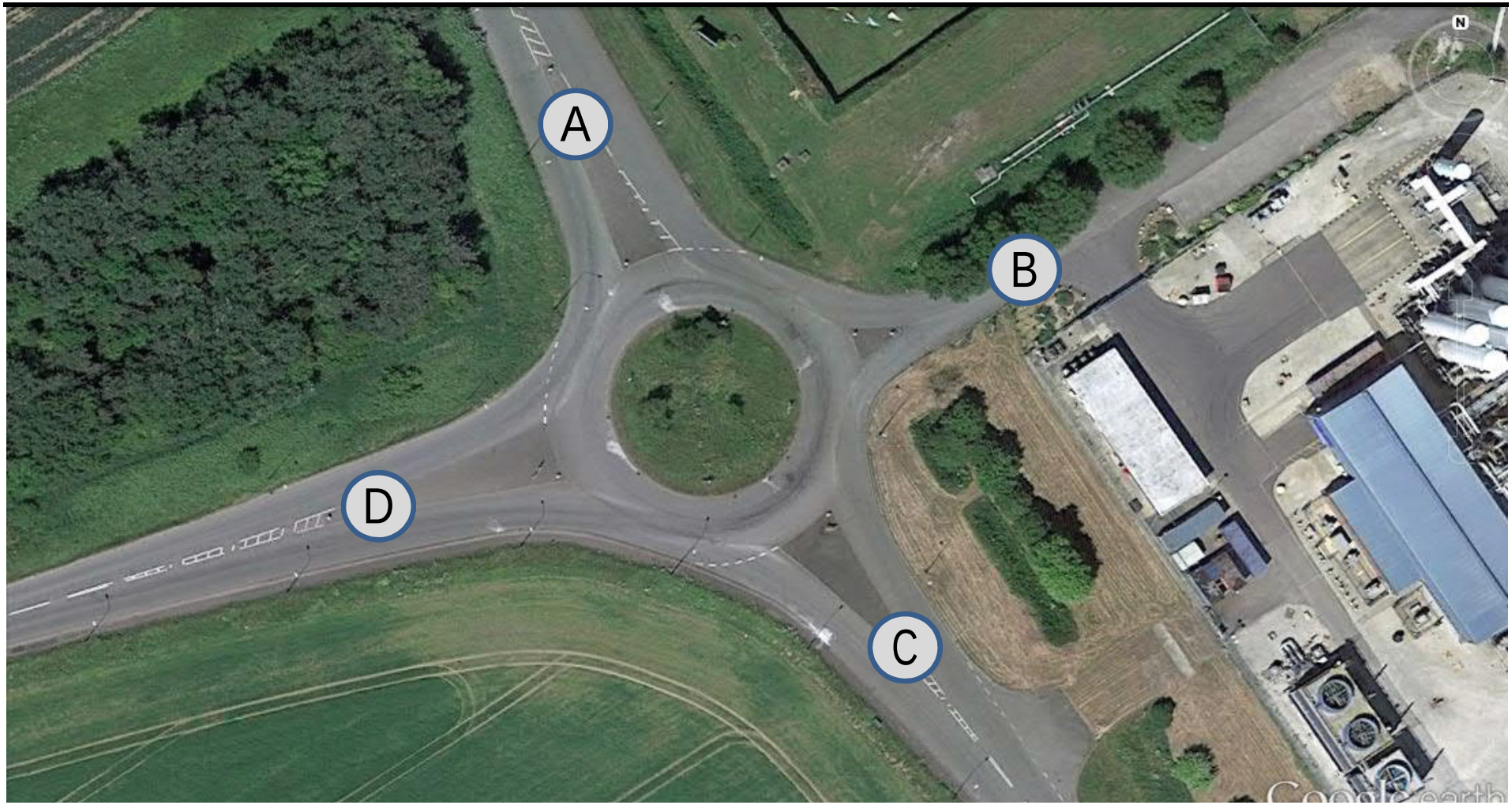
Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	33	8	0	1	0	0	0	3	45	43.9
16:15	38	11	1	4	0	0	0	3	57	60.3
16:30	57	7	2	2	0	0	1	1	70	72.2
16:45	36	0	0	0	0	0	1	2	39	36.8
H/Total	164	26	3	7	0	0	2	9	211	213.2
17:00	48	1	0	1	0	0	0	2	52	51.7
17:15	36	2	3	1	0	0	0	3	45	45.4
17:30	23	7	0	2	0	0	0	2	34	35
17:45	94	3	0	5	0	1	2	6	111	112.5
H/Total	201	13	3	9	0	1	2	13	242	244.6
18:00	55	10	0	0	0	0	2	3	70	66.4
18:15	17	0	0	1	0	0	0	0	18	19.3
18:30	17	0	0	1	0	0	1	1	20	19.9
18:45	13	1	1	1	0	0	0	0	16	17.8
H/Total	102	11	1	3	0	0	3	4	124	123.4
Total	467	50	7	19	0	1	7	26	577	581.2

Peak Hours		Totals
16:00	17:00	211
16:15	17:15	218
16:30	17:30	206
16:45	17:45	170

17:00	18:00	242
17:15	18:15	260
17:30	18:30	233
17:45	18:45	219

18:00	19:00	124

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane



Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Laporte Road / Hobson Way / Kiln Lane**
Date: **07 June 2018, Thursday**

traffic survey partners

1 1 1.5 2.3 2 2 0.4 0.2

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0		1							1	1
H/Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0									0	0
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Laporte Road / Hobson Way / Kiln Lane**
Date: **07 June 2018, Thursday**

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	5								5	5	11	3	1	2					17	20.1
07:15									0	0	3			2					5	7.6
07:30	3	1							4	4	6	1		5					12	18.5
07:45	5	1							6	6	5	1	1	4					11	16.7
H/Total	13	2	0	0	0	0	0	0	15	15	25	5	2	13	0	0	0	0	45	62.9
08:00		1	1						2	2.5	11	2	1	5					19	26
08:15	3	2		1					6	7.3	16	4		3					23	26.9
08:30	1								1	1	17	3	2	6					28	36.8
08:45									0	0	17	2		5					24	30.5
H/Total	4	3	1	1	0	0	0	0	9	10.8	61	11	3	19	0	0	0	0	94	120.2
09:00									0	0	21	1	1	6					29	37.3
09:15		1						1	2	1.2	3	2	2	1					8	10.3
09:30	3	2							5	5	8	2		3		1			14	18.9
09:45	1								1	1	3	2		4					9	14.2
H/Total	4	3	0	0	0	0	0	1	8	7.2	35	7	3	14	0	1	0	0	60	80.7
Total	21	8	1	1	0	0	0	1	32	33	121	23	8	46	0	1	0	0	199	263.8

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	19	4						3	26	23.6	26	4	2	12					44	60.6
16:15	26	4							30	30	39	8	2	8			2		59	69.2
16:30	34	3		1				2	40	39.7	43	3	3	6			1		56	64.7
16:45	17							1	18	17.2	22		5	4					31	38.7
H/Total	96	11	0	1	0	0	0	6	114	110.5	130	15	12	30	0	0	3	0	190	233.2
17:00	29	1						1	31	30.2	25	1					1		27	26.4
17:15	21	1		1				2	25	24.7	18	3	1	8					30	40.9
17:30	7							1	8	7.2	14	1	3	8					26	37.9
17:45	9			1				1	11	11.5	10		1	4					15	20.7
H/Total	66	2	0	2	0	0	0	5	75	73.6	67	5	5	20	0	0	1	0	98	125.9
18:00	7						1		8	7.4	10	1	2	3			1		17	21.3
18:15	2								2	2	5	1		3					9	12.9
18:30	3						1		4	3.4	21	1		1					23	24.3
18:45	2								2	2	6	1	1						8	8.5
H/Total	14	0	0	0	0	0	2	0	16	14.8	42	4	3	7	0	0	1	0	57	67
Total	176	13	0	3	0	0	2	11	205	198.9	239	24	20	57	0	0	5	0	345	426.1

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Laporte Road / Hobson Way / Kiln Lane**
Date: **07 June 2018, Thursday**

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00		1							1	1									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0									0	0
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Laporte Road / Hobson Way / Kiln Lane**
Date: **07 June 2018, Thursday**

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0	1								1	1
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0	1								1	1
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	1								1	1
16:15									0	0	1								1	1
16:30		1							1	1									0	0
16:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2	2
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2	2

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Laporte Road / Hobson Way / Kiln Lane**
Date: **07 June 2018, Thursday**

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	11	2		1					14	15.3									0	0
07:15	12	1						3	16	13.6									0	0
07:30	25						1	2	28	25.8									0	0
07:45	17	3						2	22	20.4									0	0
H/Total	65	6	0	1	0	0	1	7	80	75.1	0	0	0	0	0	0	0	0	0	0
08:00	18								18	18									0	0
08:15	17							2	19	17.4									0	0
08:30	19	2							21	21									0	0
08:45	7							1	8	7.2									0	0
H/Total	61	2	0	0	0	0	0	3	66	63.6	0	0	0	0	0	0	0	0	0	0
09:00	6			1					7	8.3									0	0
09:15			1						1	1.5									0	0
09:30	6	1							7	7									0	0
09:45	2	2	1						5	5.5									0	0
H/Total	14	3	2	1	0	0	0	0	20	22.3	0	0	0	0	0	0	0	0	0	0
Total	140	11	2	2	0	0	1	10	166	161	0	0	0	0	0	0	0	0	0	0

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	1							2	2		1							1	1
16:15	2			1					3	4.3									0	0
16:30	1	1					1		3	2.4									0	0
16:45	2								2	2									0	0
H/Total	6	2	0	1	0	0	1	0	10	10.7	0	1	0	0	0	0	0	0	1	1
17:00	2			1					3	4.3									0	0
17:15	2								2	2									0	0
17:30	1								1	1									0	0
17:45	5			1					6	7.3									0	0
H/Total	10	0	0	2	0	0	0	0	12	14.6	0	0	0	0	0	0	0	0	0	0
18:00	1						1	3	5	2									0	0
18:15	4								4	4									0	0
18:30	2								2	2									0	0
18:45	1								1	1									0	0
H/Total	8	0	0	0	0	0	1	3	12	9	0	0	0	0	0	0	0	0	0	0
Total	24	2	0	3	0	0	2	3	34	34.3	0	1	0	0	0	0	0	0	1	1

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Laporte Road / Hobson Way / Kiln Lane**
Date: **07 June 2018, Thursday**

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	1	1	2					1	5	5.2
07:15									0	0	3			1					4	5.3
07:30									0	0								2	2	0.4
07:45									0	0	2	2	1	2					7	10.1
H/Total	0	0	0	0	0	0	0	0	0	0	6	3	3	3	0	0	0	3	18	21
08:00									0	0				1					1	2.3
08:15									0	0									0	0
08:30									0	0	3	1	1	1				1	7	8
08:45									0	0		1	1	1					3	4.8
H/Total	0	0	0	0	0	0	0	0	0	0	3	2	2	3	0	0	0	1	11	15.1
09:00									0	0	1	1	2						4	5
09:15									0	0	1	2							3	3
09:30									0	0	3	1	1	1					6	7.8
09:45									0	0			2						2	3
H/Total	0	0	0	0	0	0	0	0	0	0	5	4	5	1	0	0	0	0	15	18.8
Total	0	0	0	0	0	0	0	0	0	0	14	9	10	7	0	0	0	4	44	54.9

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	5	3					1		9	8.4
16:15									0	0	5	1	1	1					8	9.8
16:30									0	0	8	1	1						10	10.5
16:45									0	0	15								15	15
H/Total	0	0	0	0	0	0	0	0	0	0	33	5	2	1	0	0	1	0	42	43.7
17:00									0	0	10			2					12	14.6
17:15									0	0	4		1						5	5.5
17:30	1								1	1	1	2		1					4	5.3
17:45									0	0	48	3	1	4			1	1	58	62.3
H/Total	1	0	0	0	0	0	0	0	1	1	63	5	2	7	0	0	1	1	79	87.7
18:00									0	0	21	5							26	26
18:15									0	0	3								3	3
18:30									0	0	4								4	4
18:45									0	0	8		1						9	9.5
H/Total	0	0	0	0	0	0	0	0	0	0	36	5	1	0	0	0	0	0	42	42.5
Total	1	0	0	0	0	0	0	0	1	1	132	15	5	8	0	0	2	1	163	173.9